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By Samuel Gott



THE 62647  
Divine History  
OF THE  
GENESIS  
OF THE  
WORLD  
Explicated & Illustrated.

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Juven. Sat. 14.  
*Tradidit arcano quodcunq; volumine Moses.*

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LONDON,  
Printed by E. C. & A. C. for Henry Eversden, and  
are to be sold at his Shop under the Crown in west-  
Smithfield, next Duck-Lane, 1670.



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## Premonition to the Reader.

**H**E who included Homer's Ilias in a Nutshell, made a very good Kernell for it, if the Brevity in Writing was not compensated with as great Obscurity, and difficulty in Reading. Whereas in this Divine History, we have the Genetis, and System of the whole World, in one Leaf, yea one Page, delineated as in a Mapp; not without sufficient Clearnes, as I shall shew in my Explications. And as God hath left farther Inquiry into Particulars to Human Ingeny and Industry, I accordingly expatiate in my Illustrations, still keeping as close to the Text, as I may; for, longius a Verbo, longius a Verō. Wherin though I cannot be as Brief as I would, yet I have studied as much Clearnes as I could, without Diagram or Sculpture; and purposely repeat some more difficult Conceptions, that others may better understand them: which yet I do not expect they should presently embrace, because I know that I could not so suddenly satisfy myself concerning them: and whosoever would so satisfy himself, must thoroughly read, and as thoroughly consider the whole Series. The Manuscript hath suffered many Expunctions and Interlineations, which rendered it not so Legible; and my absence from the Press permitted some faults to escape in Printing. However I expose it, such as it is, among my own Countrymen, from whom I willingly expect many Learned Observations, and Critical Reflections, which shall help me to perfect; and prepare it for another Language. The exquisite Poets in the time of Augustus (as I find in Ovid) used first to recite privately one to another: and I remember Mr. Selden told me, that he and Heinsius used to communicate Notes toward some of their Works. Schola Salerni, Collegium Conimbricense, and others, wrote in Common: which certainly is a very great advantage; where many collect the Materials, and one is the Composer and Architect of the Work, and then all review and rectify it. But I, who live alone in the Country farr from Athens, must proceed otherwise, and as Inferior Animals, first exclude an Embryonical Ovum, which may be afterward hatched into a more perfect Fœtus. In the mean time, because Errata are not observed untill they be printed, nor usually rectified untill the Book be read; and then it is too late; I have heer prenoted such as are more material, that the Reader may rectify them before-hand, by under-lining them, or by under-pointing, or pricking. Besides which, there are many other Literal faults, especially in Capital Letters intended only for more Emphatical Words, Tantographys,

A 2

fals

all Interpunctiōns, and the like, which he may easily correct, Oulo  
currente; and be pleased to pardon both my own, and the common Infr-  
mitys of Printing — aliter non fit, Am ce, libet.

**P**Age 2. Line 33. be. Read be the. p. 4. l. 3. changing. r. chaung. l. 28. Affectiō. r.  
Affectation. p. 5. l. 12. Mercurius r. Mercurys. p. 34. l. 11. Prejudicate. r. Predicate.  
p. 49. l. 17. Triangle. r. Tri angle, or Delta. p. 53. l. 23. all. r. also. p. 61. l. 15. of. r. as.  
l. 36. Paralogramm. r. Parallelogramm. p. 64. l. 35. never. r. never be. p. 71. l. 3. all  
Material. r. Elementary. p. 76. l. 8 more. r. more or. p. 82. l. 10. one. r. own. p. 86. l. 39.  
at. dele. p. 87. l. 18. clear. r. clear it. p. 88. l. 38. mid. r. mid be. p. 96. l. 30. Notion.  
r. Motion. p. 99. l. 24. Body. r. Body be. p. 103. l. 2. such. r. such as. p. 105. l. 8. Exat. r.  
Exact. l. 13. as. r. as to. p. 123. l. 6 whatsoever. r. w'atsoever, which. p. 132. l. 36. Medi-  
tately. r. Mediatly. p. 143. l. 25. Spirits. r. Species. p. 148. l. 7. as w: have. dele. l. 14.  
Maturly. r. Maturly. p. 149. l. 28. Introdusition. r. Introsution. p. 153. l. 26. were. r.  
were mde. p. 167. l. 32. it. r. it being. p. 171. l. 29. Night then by Day. r. Day then by Night.  
p. 174. l. 19. Barr. r. Burr. l. 24. at. r. as. p. 177. l. 21. of. r. by. p. 191. l. 34. somewhat. r. so not.  
p. 192. l. 13. 37. somewhat. r. so not. p. 201. l. 10. See. r. even. p. 202. l. 32. at. r. as. p. 215.  
l. 5. which. r. which is. p. 238. l. 22. Various. r. Variations. p. 239. l. 10. from. r. upon.  
l. 35. thither. r. hither. p. 245. l. 16. therefore. r. therefore called. p. 248. l. 20. amitt. r.  
emitt. p. 250. l. 11, 17, 26. Vapid r. Vappid. p. 257. l. 10. and. r. and as. p. 313. l. 18. or thera-  
bout. dele. p. 315. l. 27. not. r. not only. p. 322. l. 15. but dele. p. 324. l. 28. as dele. p. 340.  
l. 14. not. r. not so. p. 337. l. 10. Starrs. r. Starrs more. l. 27. more Rare. r. common. p. 339.  
l. 35. Angels. r. Angels or God. p. 344. l. 13. whereby. r. thereby. p. 346. l. 37. leap. r.  
flirr. p. 351. l. 16. Art. r. Art. p. 357. l. 32. when. r. whence. p. 372. l. 33. wheras, dele.



# TO THE WORLD.

**T**He Title bespeaks the Dedication of this discours of the World to the World; which if it were Animal, as *Plato* fantasied, would most freely acknowledg and subscribe to the Divine History of its own Creation: But I write to the Animate and Intelligent World of Mankind, both present and future; and more specially to the Christian World, (which is now almost the whole World of Learning) but most particularly to the British World, whose Language I therefore speak. Now though Men in these latter Ages of the World seem to forget the Original Creation therof so many Thousand Years past, certainly *Adam* the first Man, who was immediately Created by God, was very Conscious of his own Creation; nor could he by his Fall lose this Natural Knowledg, more than of being a Man: and most probably he delivered this great Tradition to his Posterity; who also retained it, while they could reckon themselves in succession, as *Enoch* the Seventh, and *Noah* the Tenth from *Adam*. But afterward in or about the Fourteenth Generation; when *Nimrod* the Mighty Hunter and his Impious faction began to build the Tower of *Babel*, (whereupon ensued the Confusion of Languages) this Knowledg also began to be Confounded; and thenceforth remained with the Primitive Language only in the family of *Heber*, the Father of the Hebrews (in whose days the Earth was divided when his eldest Son *Peleg* was born) and in his Sacred Seed after him. And from the Hebrews living in *Chaldea* the Chaldeans first derived their Philosophy; and so after them the Egyptians, and Phœnicians; and from them the Græcians; mingling it with  
B their



their several Superstitions and Idolatries. And as *Josephus* observeth, *Nimrod* first taught his Babylonians to contemn Gods Power and Providence; which he could not do without a denial of the Creation. Whence the Chaldeans began to worship the Creature, or Created Nature, instead of God the Creator: but principally the Sun, and Fire, as the Supreme and most Beneficial Element. The Egyptians who would also have their National Deity, did Idolise Water rather than Fire; induced thereunto by a Gratitude to their Great Benefactor the River *Nilus*. The Phœnicians, Græcians, Romans, and generally all the more Western Nations, have worshiped all the Elements, under several Names, and in the several Forms and Images wherewith they pleased to Invest them; deducing them all from *Cælum* and *Terra*, or Heaven and Earth, (which the Chineses still worship) But *Pan* and *Proteus*, whereby they represented Matter and Motion, were by all esteemed *Dii Minorum Gentium*. This Antient Theogony is also Recorded and Celebrated by the Poets. Which though afterward the Athenian Philosophers did more strictly examine, yet the Tradition of a *Chaos* and Creation did very long continue among them: but they supposed the Creation of the World by one Chief God to have been Eternal like himself, with certain Revolutions of Time, and Transmigrations of Spirits, Eternally Circulating and Changing by Perpetual Generation and Corruption; believing the Lying Records of Egyptian Antiquity, from whom also *Pythagoras* learned his Philosophy, and fancied I know not what Harmony of the Spheres: with many such Fictions, which he by his own *Ipse Dixit* pleased to Affirm, and Impose as *Credenda* on his Disciples. And *Plato*, being partly a Follower of his Sect, and partly a Master of another, generally retained and refined this Philosophy. But *Aristotle* rejecting all Matters of Faith, both Divine, and Human, and examining all things only by Reason, descended lower even to a first Matter, affirming it, and the *Potentia* thereof, to be Common Principle of all Material things. Upon which false Foundation, and also his Compliance with popular Idolatry, almost all his other Errors are grounded; though otherwise I esteem him the greatest Master of Reason among all Pagan Philosophers: and his Errors are not Dangerous being now so well known to all. But as *Moses* is the only Divine and true Philosopher; so of them

all

all I acknowledg *Aristotle* to be his best Commentator. *Epicurus* departed from both these ways of Knowledge, regarding Sens more than either Reason or Faith. Whereas these three, being all, and the only Ways of Human Knowledge a Philosopher should accordingly make use of them all: and therefore all Heathen Philosophy, wanting the Divine Light of Faith, could never yet produce any Complete System of the World, nor give any true and satisfactory Account therof. And this Universal Dissatisfaction begat the last of Sects which was Scepticism, or a professed Denying or Doubting all things whatsoever: admitting no Testimony or Evidence either of Faith, Reason, or Sens. But though Doubting may be a good Disciple, yet certainly it can be no Master of Philosophy; and if it be Affected and Resolved is the very Contradiction therof, and Oppugner of all Knowledge, both Divine, and Human, Speculative, and Practical: and however some may esteem it Caution in Philosophy, it is plainly Libertinism in Morality, and Infidelity in Theology: and any Dogmatical Error or Inconvenience can hardly be greater than Total Scepticism, which is as Utter Darkness, and the State of Desperation, the Bottomless pit, and *Vorago* of all Knowledge and Practice. Now as this was formerly the Progress of Heathenish Philosophy, so since Christianity Illuminated the World, yet through the Natural Darkness and Corruption of Human Understanding, it hath again had the same Revolutions. For so first Platonical Philosophy, which *Porphyrus*, *Plotinus*, *Jamblichus*, and others very much rectified and refined by the Spiritual Light of Christianity, was by them opposed against it. Also *Philo Judaeus*, and *Origen*, and some of the Christian Fathers seem to have some Savor therof. Afterward the Schoolmen generally referring Matters of Faith to Scripture, and examining Nature by Reason, rather embraced the Peripatetical Philosophy, which hath long continued, untill in this last Age, some others, though they can discover nothing which the Athenian Wits had not Invented before them, yet reviving and renewing old Errors, like Fashions, relaps again to Epicurism, in one kind or other, of Atoms, or Corpuscles, or the like, And when this Humor hath lasted as long as it did formerly, we may expect Scepticism to succeed: and indeed I suspect that we are already in the very Confines therof. Now though Wan-



ton Wits think they may thus dally with Opinions as they please; yet, as it is most truly said, *Studia abeunt in Mores*: and so *Virgil* very aptly introduceth Drunken *Silenus* changing the Epicurean Opinion, but Grave *Anchises* more soberly Platonising. Certainly their Novell Doctrine of Matter and Motion doth much Embase the Immaterial Spirit of Man, and render it more Gross and Sensual, and unfit for Spiritual and Divine Contemplations. And though I believ some of the Assertors therof to be as far from Atheism as myself, yet I must freely profess that the Assertion tendeth toward it, and was by Heathens Improved to the Denial of a Creation; and I appeal to every Reader whether it doth not Induce some Suspicion therof in himself; yea I suppose this to be chiefly that which renders it so acceptable and agreeable to the Corrupt Minds of Men; and the Writers therof themselv seem to be somewhat Conscious herein, while they make their usual Apologies, and need to tell the World they are no Atheists. Thus also by affirming Accidents and Qualities to be no Real thing; they make both Virtue and Piety to be only Notions.

*O Virtus colui te ut Rem, at tu Nomen inane es!*

And if they could also prove the Reward therof, and Punishment of Impiety and Vice (which all must accordingly perceiv and feel) to be only Notional, and not Real; they should thereby deliver up all Mankind to a Reprobate sens, or rather Insensibility and Indistinction of any Good or Evill. And their Opinion of Universal Nature is like that of *Cesar*: *Respublica Inane Nomen*. Besides how prejudicial such Contempt of Antiquity, and of all Authority, and the Affection of Novelty and Innovation, may be to Church or State, I leav to wise Politicians, Certainly all Christian Academies and Schools of Literature should deeply resent such Novell Attempts, which Professedly subvert all the Antient foundations of Learning; whereby formerly the Barbarous World was taught both Arts and Manners, and a ready way prepared for Christian Religion; and wherupon so fair a Superstructure hath been raised (to which even these Novellists ow their Education and Instruction) and a farther Progress might still have been made, if it were not Obstructed by themselves; and Young Wits led away into an  
Inextricable

Inextricable Labyrinth of Matter and Motion; and the *Magnum Inane* of Vacuity, and at last plunged into the Abyss of Perpetual Scepticism. I have no Petulant Humor, yet it may exceed the Meekness and Patience of my Great Master *Moses*, to hear some Christians affirm the very Essences and Formalities of all Elementary, Vegetative, yea even sensitive Natures, to be only Matter and Motion: as *Aaron* said of his Materials; *I cast them into the fire, and there came out this Calf*: and so to set up several Figures of things, as the Jews did the Figures which they had made; and Heathenish Idolaters their Idols and Images. Whereas indeed it is rather the Art of a Statuary, than of a Philosopher, thus to make *Mercurius Ex quolibet ligno*: or as he who having only an *Hercules* of Wax in his shop, when one came to buy of him a *Mercury*, could presently turn his Beard into a *Galerus*, his Club into a *Caduceus*, and his Buskins into *Talaria*; and so he might as well have made thereof a *Jupiter*, *Juno*, *Venus*, Man, Beast, or Tree, or as we say *Quidlibet ex quolibet*: Which yet shou'd be only Wax varied. Thus our new Philosophers, not acknowledging all those several Primitive Natures which God in his Infinite Wisdom pleased to Create, like Etymologists, can derive one thing from another so far as scarcely to leav any Primitives. *Cartacean* Philosophy, which describes the World in Paper otherwise then God hath made it to be in Nature, beginning, *Cogito, Ergo Sum*, and so proceeding, *Cogito, Ergo Est*: as though becaus the Operation doth indeed prove the Essence of the Cogitant, it did therefore also prove the Real Entity of any thing Cogitated: and yet this is all the Argument it can afford us to prove that First and Fundamental Truth, That there is a God, *Cogito esse Deum, Ergo Est*. Whereas the most Judicious and Ingenious Father, long before had Invented the first Argument, when disputing with a Sceptike, he first proves that he Is, because he doubts whether he Is or not; and because he is a Creature, thereby also proves that there is a God the Creatour: whom I shall rather chose to follow than any such Neophytes; who, when God saith in the Beginning he made Heaven and Earth, say he made only Matter and Motion; and professing that they had deliberated and tried to deduce all this Spectable World from a *Chaos*, or from Matter only diversified by its own Motion, Figure, and the like; have asserted it to be Matter; whereas God expressly declareth that he Produced



and it out of a *Chaos* in the Six Days Works: and who make  
*Sol* and the Planets, and the Stars to be the Centers and Foundati-  
 ons of all the *Vortices* of Matter and Corpuscles about them;  
 whereas the whole *Æther*, Air, Water, Earth, and Vegetatives, were  
 made in the Three first days before them. Whereupon I may ve-  
 ry truly and safely pronounce; *Ant hac non est Scriptura, aut ista*  
*non est Philosophia*. For mine own part I must here profess, that  
 having long since studied Philosophy in the University, and read over  
 several Philosophers, both Antient, and Modern, I could never find a  
 satisfaction in any of them: and if I had not reflected on this Divine  
 History, should have been tempted, as others, to Invent some new  
 Philosophy suitable to mine own Fancy: For now he is no Philoso-  
 pher who will not attempt to make a new Philosophical World, and  
 produce his Module therof; shewing how it might be best made, and  
 with least Charges: but certainly it is most Ridiculous and Impious  
 thus to presume that God must therefore have made the World ac-  
 cording to our Module, becaus we judge it best; rather than ac-  
 knowledge that to be best which he hath made, becaus he who  
 made it is Infinitely Wiser than us. Wherefore to find out how  
 God made the World, I had recourse to his Word, reading o-  
 ver this first Chapter of *Genesis* again and again; and also many Com-  
 mentators, in whom generally (besides the first Article of our Creed  
 concerning God the Maker of Heaven and Earth) I found more  
 of *Aristotle* than of *Moses*; (yea even Translators seem to incline  
 that way) but the Cabalistical Rabbins, and Scholastical Philo-  
 sophers, by their Jewish, and Heathenish Interpretations, have  
 so Confounded and Obnubilated this Divine Light, that almost  
 all Christians fear to approach it; and seem rather to dread  
 and adore it at a distance as some Inscrutable Mystery: and some  
 think they greatly favor Scripture by restraining it to Theolo-  
 gy and Morality, and not intitling it to Natural Philosophy; and  
 so, as it were going backward, cover it with the Mantle of their  
 Indulgence, that the Philosophical Nakedness thereof may not  
 appear to themselves or others. Whereas considering for what  
 end this Divine History of Created Nature was writ, and being suffi-  
 ciently confident of the Intrinsic Verity, and Extrinsic Evi-  
 dence thereof, I adventured to look into the Naked Simplicity  
 of the Text, and endeavored first to discover the plain and true  
 System of the World, which God the Creator hath described  
 therein,

therin; and thereby reveled unto us. Which I have accordingly expressed in my Explications; being only a brief Philosophical Paraphrase upon the Text: and yet while I thus Explicate the Text by my Paraphrase, I still submit my Paraphrase to be judged by the Text: and I therefore set these Explications, as a Partition, or *Cancelli*, between the Divine Word and my Human Illustrations therof: which I have also deduced from the Created Nature, as the Counterpart of Scripture; and have hearkened to the Voice therof, as to the *Echo* of the Creating Voice of God. Nor do I dissent from Pagan Philosophy *Animo Contradicendi*, or to flatter Christianity (which is far above it) but shall also retain any thing of Truth that I have found therein; and all advantages therof, either Platonical Speculations, Peripatetical Ratiocinations, or Epicurean Sensations, yea even Sceptical Caution it self: and am Dogmatical only in such *Theses* which according to the Law that I impose on my self, I shall first prove by the Concurrence of Divine Authority, Human Argument, and Sensible Experiment: and if I knew any more ways of Probation, should not decline, but most gladly embrace them. Neither do I thus offer any thing to the World wherof I have not first satisfied my self after so long trial and strict examination; wher in I could never yet find any thing considerable, either of Reason, or Sense, which I could not fairly reconcile to the Divine Authority of the Text. Also I have adventured to propound many *Hypotheses*; which though I dare not so confidently Assert, yet I should not Insert them, if I did not esteem them very Probable: for indeed it is the most proper, and a sufficient Task for any Philosopher, to Inquire only what God hath Created: and I ever reputed it a great Vanity in any who presume to go farther, and will also offer to shew what he might have Created: not without some Insinuation of what one most Profanely Expressed, That if he had stood at Gods elbow when he made the World, he could have shewed him how to have made it better: as though whatsoever Hypothetical Natures, or Poetical Worlds, they please to fancy and describe,

*Natura aut facit hoc qua legis, aut faceret.*

Possibility is Indefinite, and to pursue it Vain and Endless.  
It is not Absolutely Impossible, that this, or any other Book, might be:



be Printed by the Casual Concurrence of Letters, Ink, and Paper, without any Composer, or Printer; yet if any should therefore write a large Discours therof, or of any other such like *Hypothesis*, I think it might well deserv to be placed in *Rablais* his Library. But though I shall carefully exclude any such Improbable Trifles, yet I doubt not but that among so many supposed Probabilities, I may run into some Errors, and many *Errata* in Terms of Art, and such other *Peccadillos*, which may prove Scandalous and Offensive to Weaker Minds, who regard Words more than Things; and may be matter enough of Disgrace and Disparagement to the Captious, who though they can find no fault in *Venus* her self, will Carp at her Sandal, or something about her. And I am Conscious that I may be more liable hereunto, being no Mathematician, Astronomer, Chymist, or other Artist whatsoever; but one among the Laity of Mankind, having only two Books which I regard, Scripture, and Nature: and though any may easily bite through my Human Infirmary, yet he shall break his Teeth at these Bones, *Fragili quarens illidere dentem Offendet Solido*.—However I am sufficiently secure, being already where I would be; that is, below Fame, and above Infamy: and as I do not Superscribe my Name to gain the one, so neither do I Conceal it to avoid the other: but either is as Indifferent to my self as it is to my Pen to write it, only it is somewhat less not to write it. Nor will I presume to add any thing to Divine Authority, professing it to be my chief Designe to Exalt it as the only *Statera* of Truth, both Natural, and Supernatural; and as we Eminently call it Scripture and Bible, so it is indeed the Writing of all Writings, and Book of all Books; whereby they are to be Judged; and *If they speak not according to this Word, it is becaus there is no Light in them*. As a worthy Friend, laying his hand on the Bible, once truly said to me, If this Book were not Extant in the World, there were nothing Certain and Infallible left to Mankind: wherof we have sufficient Evidence, not only in Scepticism, but even in all other Philosophy, of which there are so many several Sects and Opinions, or indeed only *Hypotheses*; for I cannot conceive that the Authors therof were ever satisfied in themselves, or could expect to satisfie others thereby; but vented them as some things which they esteemed Possible, or the best of them only as fair Probabilities

Probabilities. Whereas this foundation laid in Scripture is as sure as Nature it self; which both are the Work and Word of the same Divine Creator; and every Superstructure rightly built thereupon shall stand. Now though I may not presume to be any such Master-builder; yet I think it a very great Work effected, if I may reduce others to this Fundamental System, and provoke them to build upon it; as I have begun, and offered this rude Essay: and though they shall please to Demolish my whole Fabrike, and themselves to Erect any other, and lay upon it *Gold, Silver, Precious Stones, Wood, Hay, Stubble*, or what they list, I have my Designe; which is to Assert this to be the only true Foundation of Natural Philosophy, as well as of Theology, and Morality. *And the Fire shall try every mans Work of what sort it is.* And so I not only Dedicate this my Work unto the World (as indeed every Writer writes to all by making his Writing Publike) but also I Appeal unto it, and make every Reader my Judge: for I do not presume to teach the World; nor shall I, as others, term it the People that knoweth not the Law of Nature; for though it consist of many Heads, and almost as many Sentences, yet I do not find but that the last Result, and that wherein they Acquiesce, is Truth: whose common Fate in the World is first to be gazed on, and perhaps derided and opposed, and at last after farther scrutiny to be entertained and embraced; and the Fate of Error contrary therunto, first to be Applauded and Admired, and so received without any Pratique, and afterward when it is more strictly examined, to be Rejected and Exploded. Thus Truth is the Daughter of Time; and as Time is the best Critique, so I esteem *Homer, Virgil*, and such others, to have been the best of Poets, and *Plato*, and *Aristotle*, the best of Philosophers; because their Works have so long survived; whereas there are only some Fragments of *Epicurus* now remaining, as broken and minute as his Corpuscles or Atoms. Certainly Scripture is both most Antient, and also most Intire. Nor can I suppose that the Discovery of any considerable Natural Truth, or Profitable Good to Mankind, hath been renounced, or will ever be lost by them. Wherefore now O Christian World! who art a Collection not only of Men, but of Christians, Judge thou according to both Capacities, whether Scripture be not the truest Comment that ever was made upon Nature: and that thou maist rightly discern between them, set the short System of the Divine *Genesis*; therof by all or any other whatsoever.



*Centuleris toto cum sparsa Volumina mundo;  
Illa Homines dicas, hac docuisse Deum.*

And now after so many Christian Ages, let it be once Determined, whether this be a true History of the Creation, or not; and if it be, (as most undoubtedly it is) let us no longer be bereaved of so great a Treasure, which hath hitherto I know not how been not only hid under ground, but trampled on by the feet of men. Nor let any Elude and Enervate it by the Imputation of Popularity, whereby even Popular Understandings may learn Divine Philosophy; as the Psalmist professeth, that thereby he had acquired *More Understanding then all his Teachers*. Nor let us resigne not only our Faith, but also our own Reason to others, becaus they pleas to abandon theirs, and scoffingly call it Logical, or Metaphysical, or the like; which are the Acquests of those Noble Arts and Sciences, whereby we excell Brutes, Barbarians, and themselves. Nor may they justly term this a Prejudice against them; for how do they Prejudg? who Appeal to the whole World, or the Great University of Mankind; and as good Scribes bring forth out of their Treasure things New and Old: doing herein like Galenists, who willingly admit and add to their Dispensatorys any Chymical Experiments which are sound and useful (and to such Physicians all wise Patients commit their Bodys rather then to Empirikes) Or are they prejudiced? who affirm nothing but what they prove by all the ways of Probation, Authority, Argument, and Experiment. For to what Judg can we Appeal but the World, or to what Law but Faith, Reason, and Sens? and may we not rather suspect the Prejudice to ly in Novelty and Party, and a new Sect of men, who admit only sens, and yet will not be Judged by that, unless it speak their Sens? But as I have not pawned the Authority of mine own Name, upon which I know I could borrow very little; so I only beg of others; that neither any Passionate Amours which they may have for any Man or his Opinions, nor the Inebriating Fancies of their own Spirits, nor any pretended Monarchy or Monopoly of Knowledg, may be by them Opposed to Truth; for *Magna est Veritas & prevalebit*: and I doubt not but that *Scriptum est*, and *Probatum est*, will by their own Intrinsical Value, without any Image or Supercription, pass Current through the

the whole Christian World. But let us all rather Consult together the Advancement of true Knowledg, and the Real Benefits of Mankind; both in Speculation, and Action: Wherof the Speculative Part doth properly belong to Scholes and Academys, who, if they shall make this Divine History of the Creation to be their *Symbolum Philosophicum*, shall need no other Fundamentals; nor have they any better way to preserv their Disciples from these new Philosophical Romances of *Mundus Alter, & Idem*. And as it hath been much wished by Wise men that Scholars would season their Study with more of Common Life and Civil Conversation (the want wherof hath been the Scandal and Scorn of Learning) so particularly Academical Philosophers should hearken more to Experiments, which though it be not fit for themselves to Practice, yet they may Inquire of Chymists and Mechanikes, and be Informed therof by them, to whom the Practical Part doth properly belong. And Mechanikes may be also much Assisted and Directed by Philosophers, with many Rules and Regular Proportions; whereby they may be Instructed, and also Cautioned from attempting Impossible, or any thing Impracticable; as the Philosophers Stone, Perpetual Motion, or Fire, and the like; and also much Advantaged in the Attempts of Possibilities; as if the Doctrine of Local Motion of Bodys were more fully cleared, and all the Variations therof, not only according to Distances from the Center, Multiplications of Wheels, Pulleys, Leavers, and the like, and all the several Situations and Positions therof; but also all the Mysterys of Increments and Decrements of Velocity, Consistent Strength, Elasticity, Pressure and Nonpressure, Preventions of Vacuity, and the like, were ascertained unto them, it might greatly help them in contriving their Machins and Engines. It hath been observed that though Speculative Philosophy hath not much Advanced in these last Ages of the World, yet there hath been a great Improvement of Mechanical Arts: but I conceive that thus both might grow up together. Nor is a Mechanike so mean a Title in Human Society as is commonly reputed; Certainly the End of all these Speculations is Practice, which doth most Immediately promote the Good of Mankind. And if I should endeavor any such Profitable Inventions, I had rather be assisted therein by a Corporation of Mechanikes, then any College of Philosophers: and I would kiss that mans Hands, yea his



Feet, who should Collect and Publish an exact and faithful History of Artificial Experiments, not only Chymical and Curious, but Mechanical, and of all Trades and Artifices: which together with the History of Extraordinary Natural *Phanomena*, are very great *Desiderata*, and would be of very much Use and Improvement. But Inventions, as I conceive, are rather strange Fates and Felicities; and some *Magnalia* therof have proved as great Treasures to the World as the Indian Mines, which certainly the Discovery made by *Columbus* did comprehend. Yet as they are not of Ordinary Production, so neither only Chances, as we term them; but Extraordinary Providences of God in some Ages, wherein he designeth thereby to accomplish some greater Intendments: as when God purposed to revele the Glorious Light of the Gospel through the whole World before the second coming of *Christ*, he stirred up the Spirit of *Columbus*, by a strange Dogmatical Confidence of more Earth then was before discovered, maugre all Repulses, and Delays, Indefatigably, and Undeniably, to endeavor and attempt the Discovery therof: which yet he could never have effected if also the Compass, or Seamans Card, wherof former Ages were Ignorant, had not been then lately Invented; and so likewise the Gun, without which so few Adventurers could never have kept Possession against Innumerable Natives. And about the same time Printing also was Invented, to Disseminate Knowledge through both the Worlds. But I do not esteem Additions to be Inventions; as the Telescope or Microscope, which are only farther Improvements of the Perspective, (that was first Invented by a Mechanike:) or as the *Granado* is of the Gun, and the like. Yet we might hope for more both Inventions and Additions, if Philosophy were made more Mechanical, and Mechanike more Philosophical. Wherof we have now the greatest expectation from the happy Institution of the *Royal Society*; and that so many Mercurial Wits, Interceding between both these Regions of Speculation and Practice, will transmit Philosophical Instructions to Mechanikes, and Mechanical Experiments to Philosophers: and after all their Curious Disquisitions, and many Vibrations, like the *Pendulum*, settle at last in the most Direct Line of Truth, Proving all things, and holding fast that which is Good, and shall be for the Good of this Nation, and of all Mankind: which shall render their *Society* a *Solomon's House*, and this Island a *New Atlantis*. And as the Lord Verulam

hath well observed, that the Practical Theology of Scripture hath been by none better Ventilated then by English Divines; so may this Divine History of the *Genesis* of the World be best Elucidated by them, who though they superscribe *Nullius in verba* in defiance of any Human Magistery, yet always except *Verbum Dei*, in submission to Divine Authority. And if the Active Spirits of this Nation would freely clear and disengage themselves from the Humor of Foreign Novelty, they might exceed others in their happy Endeavors; though we Tramontanes have been Judged by them better for Imitation then Invention: but I desire them to produce any thing in this last Age equal to those two Noble Inventions which were both of English Extraction: that is, the Inclinator or Dipping Needle, whereby the Latitude is discovered; wherof, as I have received it by Tradition, the Inventor was *Robert Norman* our Countryman, whose Name deserves more Heraldry; as they will easily acknowledge who shall attempt to Invent the like Natural Instrument, whereby to discover the Longitude. The other is the first Observation of the Circulation of the Blood, wherof our Learned *Doctor Harvey* is the well known and Monumental Author. And for Philosophical Discourses and Discoverys of Nature I may name two others; who though Parallel one to another, yet I suppose neither of them can be Parallel'd by any other Nation: that is, the Great *Chancellor Bacon* whose Natural History hath made his own Name Historical: and the truly Honorable *Robert Boyle*; of whom I may well say, that as *Hiero* made a Law in *Syracuse* That every one should believ whatsoever *Archimedes* affirmed that he could do; so all ought to believ whatsoever this Noble Person declareth that he hath done, in all those manifold Experiments wherewith he hath enriched the World. Now let this be the Conclusion and Summ of the whole matter; That as the End of all Created Nature is the Divine Glory of the Creator, which the whole World as a Mirror was made to Represent to us Naturally; so should all Spiritually Render it unto him. And thus we Christians being taught by God, the Author both of Scripture and Nature, truly to know the Creation and System of the World, which Heathen Philosophers groped to find out all their days, and have disputed in all Ages, should with the Primitive Hebrews, and their Divine Doctors, *Moses, David, Solomon*, and the rest, Glorify the Infinite *Jehovah*, Creator of Heaven and Earth. And



I have very much wondered that not only in Spirituals, but also in Naturals, Seing we should not See, and Hearing we should not Hear, and Understand with our Hearts, the things which are writ in such large Characters, and Proclaimed to us with so loud a Voice. Wherefore I beseech the Divine Spirit so to Illuminate us in the true Knowledge of his Word and Works, that henceforth they may be no longer hid from our Eys; but that it may now be said of Holy Scripture, and of the Nativity of the World therein,

*Nota Mathematicis Genesis tua.*

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THE

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THE  
Divine History  
OF THE  
GENESIS  
OF THE  
WORLD.

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SECTION I.

*In the Beginning, &c.*

EXPLICATION.

In the very First Being of Heaven and Earth, or of any Thing therein, or of any Originals thereof from Absolute Not being. And in the very First Instant of their Duration, or Time it self, then also commencing from Non-time or an Absolute Nullity thereof.

ILLU-



## ILLUSTRATION.

1 *That the World is Finite ; Proved by the Corporeal Quantity thereof.* 2 *By Successive Quantity.* 3 *By Discrete Quantity.* 4 *Rejection of Impertinencys, and what Postulations only are required.* 5 *Sensible Demonstration of the first Proof.* 6 *Of the Second.* 7 *Of the Third.* 8 *The Possibility of the worlds being Ab Æterno disproved.* 9 *The Possibility of being In Æternum, or Immortality, in what Sens granted.* 10 *The Summ of the whole Discours, That there was a Begining of the World.*

I. **T**HAT there was a Begining of the World (besides the Divine Authority of the Text) is as Rationally Demonstrable, as it is Sensibly evident, That there is a Heaven and Earth : for it is also evident, that they are Bodys, Extended by Part beyond Part, and therefore Finite, or bounded with Extremitys of that Extension (which we call First, or Begining ; and Last, or End ; becaus we may begin to measure at one, and end at the other) for that very Extension which renders them Bodys by Extending Part beyond Part, doth also Terminate them, that is, Extend them so far, and no farther. Thus the whole Body of the World hath two great Parts ; Heaven, and Earth. And whatsoever hath Parts is Finite, becaus every Part is Finite or Limited to a Proportion not so great as the Whole, otherwise it should not be a Part of the Whole. And as one Part is Finite, so are all the Partsof the Whole, becaus they are all Parts. And so Consequently is the Whole ; becaus it is equal to all the Parts ; otherwise it should not be the Whole of all the Parts therof. And thus Heaven, which is one Part of the whole Body of the World, is a less Whole in it self ; becaus it is the whole Heaven. And so likewise Earth, which is the other Part of the whole Body of the World, is also a less Whole in it self ; becaus it is the whole Earth. Now either of these two less Wholes is Finite in it self ; becaus it is only a Part of the whole Body of the World : and becaus both these less Wholes are Finite, therefore the whole Body  
of

of the World is also Finite, though it be a greater Whole: for there is no Greater nor Less in Infinite, which is Infinitely beyond any Proportion, and without any Parts whatsoever; because a greater Whole is that which hath greater Parts, or more equal Parts; and a less Whole is that which hath less Parts, or fewer equal Parts. And since whatsoever hath Parts is Finite, therefore whatsoever hath greater or more, or less, or fewer Parts, is also Finite, and cannot be Infinite. Again every Part is such a certain Proportion of the Whole as it is, otherwise it should not be such a Part thereof; and therefore hath such a certain Measure of it self, whereby it is such a certain Proportion as it is, and not greater nor less. And as all the Proportions of all the Parts, are the Whole Proportion of the Whole; so all the Measures of all the Parts, are the whole Measure of the Whole. And whatsoever is Mensurable is Finite; because it is Mensurable, and not Immens. Wherefore the whole Body of the World is Finite, as well as Heaven, and Earth, or any less Part, or the least Particle thereof whatsoever; whereof there is the same reason: Otherwise the Whole should be greater then all the Parts, or the Parts greater, or more, then they are, which is Impossible. And the contrary thereof So Mathematically true, and evident according to Common Sentence, (that every Part is less then the Whole, and the Whole greater then any Part, and equal to all the Parts thereof) that it cannot be further proved by any thing more evident then it self: Wherefore this Conclusion is most true and evident; *Omne Sectile est Finitum.*

II. Now as Corporeal Quantity, which is Consistent, and hath Part beyond Part, is therefore Finite; So also Time, which is Successive and hath Part after Part, is also Finite. And though Part beyond Part may be Inverted, and the First become Last, or the Last First; or Circulated, and the Beginning United to the End (and so every Consistent Quantity is Finite, because it hath such Parts) Yet Part after Part Succeed and follow one another in a most direct Line, and by Such an Immutable Law and Order, as can neither be Inverted, nor Circulated: otherwise there should not be Part after Part; which must necessarily be in Temporary Succession: for Past can never be Present, nor Present Future, nor all together. Wherefore Time cannot possibly be

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Circular:



Circular: for in a Circle all the Parts must Consist together; as in Circular Motion all the Parts must Move together. Though probably the Opinion of the Eternity of the World was grounded on some such Imaginary Circulation of Time, and Revolution of Platonical Years. Whereas though all things measured by Time might be supposed to return again into the same State in all other respects, yet Time it self can never return to be the Same; becaus it is as Impossible to recall Past, as to anticipate Future. So that where there is such a fixed Priority and Posteriority runing still forward in a most Direct and Immutable Succession of Part after Part, which is Finite, there must necessarily be a Finite and Fixed First, or Beginning; and Last, or End; according to the Fixed Order and Succession of the Parts. And as certainly as this Present Instant is now the Last or End of all Time Past, or Present, which hath hitherto Actually Existed, or doth Exist; so certainly there was some determinate Instant, which was the first or Beginning thereof. And so this Conclusion also is most true and evident; *Ubi Primum & Posterum, ibi Primum et Postremum.*

III. Lastly as Bodys and Time, so Number or Quantity Discrete, which hath Part Discreted and severed from Part, is also Finite in it self; and doth most Discernibly manifest the Finite Nature, both of Bodys, as in the Scale; and also of Time, as in the Dial: whereby their Continuous Parts being Arithmetically Divided into Numerable Proportions are rendred most apparently Numerable and Finite. And so also this Conclusion is most true and evident *Nullum Multiplex est Innumerus.* From all which Conclusions drawn from every kind of Quantity, Corporeal, Successive, and Discrete, it most Necessarily follows, That whatsoever is Quantitative is Finite; for it must be granted under the highest pain of Contradiction, That Actually Mensurable cannot be Actually Immense, nor Temporary Eternal, nor Numerable-Innumerable.

III. Nor is this plain Probation concerned in those more Curious Disquisitions, Whether Quantity be any Real thing in it self, or only a Mode, or Relative Respect (or I know not what others pleas to term it) Since it is most evidently the Geometrical, Chronical,

*Rejection of Impertinencies, and what Postulations only are required. To*  
Chronical, or Arithmetical, Measure of all Quantitative things,  
which are within the Virge therof, and Measurable by it. Nor  
of what Parts it doth Consist, or how it is Divisible into them;  
since it is most evident that it hath Parts. Nor yet whether any  
Whole Quantity hath Physical Parts; since it is most evident that  
it hath Mathematical Parts, and is Divisible into them. And though  
I shall heerafter inquire into all these, yet I will neither now pre-  
vent my Self, nor intangle this Probation (which as it is most firm  
and solid in it self, so I desire to render it most clear and free from  
all Impertinencies) with any such Curiosities. Nor do I begg any  
therof before hand; but only insist upon these most reasonable  
and undeniable Postulations, That an Inch is the twelfth Part of a  
Foot, not more nor less; and a Foot twelve Inches, not more nor  
less. That an Hour is the fower and twentieth Part of a Day, not  
more nor less; and a Day fower and twenty Hours, not more nor  
less. That an Unit is the hundredth Part of a Century, not more  
nor less; and a Century an hundred Units, not more nor less. Or  
yet more plainly, That an Inch is an Inch, a Foot a Foot, an Hour  
an Hour, a Day a Day, an Unit an Unit, and a Century a Cen-  
tury. And so any greater, or less, Part, or Whole whatsoever;  
which are all Identical Propositions, and neither need, nor are  
indeed capable of Probation. Nor are these Sections of Conti-  
nuity only Imaginations, or the Institutions of Reason; but Rea-  
litys in Nature. And so God Created the Heaven and the Earth  
distinct Parts of the whole Body of the World, and made the  
Evening and Morning a distinct Day, and consequently the Cardi-  
nal Numerations therof. And he made the Heaven to be above, or  
without, the Earth; and the Earth to be beneath, or within, the  
Heaven: and the First day to be before the Second, and the Se-  
cond before the Third; and consequently the Ordinal Numerati-  
ons therof. And heerin I suppose no Human Reason or Sens will  
or can dissent from Divine Authority; becaus these are things also  
Rationally, and Sensibly, evident in themselves: however some  
may doubt or dispute what I have evidently proved heerby, That  
there was a Beginning of the World. Nor do I labor, or care to  
prove, when that determinate Beginning was (which I leav to  
Chronologists) but only that there was such a Beginning whenso-  
ever it was, which sufficeth my present Intention.



V. For as in a great Waſt or Common, though only the learned Artiſt can give an exact account of all the Acres, Rodes, and Perches therof; yet every Vulgar Ey can diſcern that it is Meaſurable and Finite, and can eſtimate it more or leſs. And as every Traveler, though he hath not an Itinerary to inſtruct him in the juſt Diſtances between one City, or Country, and another, yet knows that there is a certain Space between them, otherwiſe ſuch, and ſo many Paces, could never bring him from one to the other: ſo though it be the Work of Geometricians and Aſtronomers to meaſure Heaven and Earth; yet we all know that the Earth on which we tread hath a Surface, and a *Diameter*, which are Finite; becauſe the Surface on which we tread doth end and terminate it ſelf under our feet; and that doth alſo determinate the *Diameter*, which is Proportionable unto it: and becauſe the *Diameter* is Finite, therefore alſo the Circumference which muſt be Proportionable therunto is Finite. And ſo is every Sphere of the World, Air, *Æther*, and any higher Heaven, or whatſoever we can Imagine to be the utmoſt Circumference of the whole World: for to whatſoever Circumference our Imagination can extend it ſelf, it can only be Proportionably greater then the Circumference of the Earth, which it encompaſſeth; and muſt alſo have a *Diameter* proportionable to it ſelf: both which evidently prove it to be Finite, as well as the Earth; becauſe there is no Greater nor Leſs in Infinite, as I have already proved.

VI. And ſo though we may diſpute the Nativity, or certain Beginning of the World; yet it is moſt evident and indiſputable that it had a Beginning: for none can deny it to be this Day, or Hour, or the like, one Day, or Hour, or the like, elder then it was the laſt; and ſo backward as far as he pleaſeth: therefore he muſt alſo confeſs, that there was ſome Firſt Day, Hour, and the like, and conſequently ſome Firſt Inſtant, and Beginning therof: for the Duration and Age of every thing muſt neceſſarily be computed from a Beginning or Nativity; otherwiſe it ſhould be incapable of any Addition or Succeſſion (which is apparently in all time) becauſe it already exceedeth all Number: for Precedency of Part before Part without any Beginning renders the Precedent Parts Innumerable, and conſequently incapable of any Succeſſion or Addition.

VII. So

VII. So also in Number there must necessarily be a First, and no Number can precede an Unit; though you may still add to it, and possibly multiply it to any Summ Imaginable; which yet being once Stated will be found as Numerable as a Single Unit; because it is only the Addition of so many Units: for as a Day, or Hour, or any other Part of Time Actually Past, is only a Day, or Hour, or such Part of Time as it is, and not greater, nor less; so every Day, or Hour, or other Part of Time whatsoever, is only One Day, or Hour, or One such Part of Time as it is, and not more, nor fewer: and therefore so many Days, or Hours, or other Parts of Time as are Actually Past, are only so many Ones as they are, and not more, nor fewer; which though never so many must necessarily be all Numerable, by Addition of so many Ones as they are, and not more, nor fewer. And consequently all Time Actually Past, which may be Numbred by them, is Numerable and Finite: and therefore had a Beginning; because the Number thereof is Ordinal or Successive; whereof there must be a First. Thus if we should compute the whole Age of the World according to the particular Ages, or *Secula*, of Men or Brutes; or if you please according to the Revolutions of Platonical years; yet there must necessarily have been a First, Second, and Third *Seculum*, or Revolution, or so many as we will suppose to have been Actually Past and Precedent, and not more, nor fewer, nor other then Successive. All which summed up together will be found as Finite as a single Unit, and must have a First, and Last, as well as One and One Ordinal and Successively. Nor indeed can we Rationally Imagine any Time whatsoever Actually Past and Precedent, not to be Actually Finite. And if it cannot be otherwise in Imagination, much less in Reality.

VIII. Yet the World might Possibly have Existed before it did Exist, or Actually was; and as long before as you please to Imagine; and so it may still be continued Perpetually in Possibility; which yet will be alway Possible, and can never be Actual: for no such Precedent, or Subsequent Perpetuity, ever was, or shall be, nor can reasonably be Imagined to be Actual. Neither is it properly a Possible Perpetuity, but rather a Perpetual Possibility of such a supposed Precedency, or Subsequent Futurity, which can



22 *The Possibility of being In Æternum, &c. in what Sense granted.*

can never be Actual; otherwise it should not be Perpetually Possible: for as Possible, while it is Possible, cannot be Actual; otherwise it should not be Possible, but Actual; so Perpetually Possible can never be Actual; because then it should cease to be Perpetually Possible. As it is said of Corporeal Quantity, that it is alway Divisible into alway Divisibles; ever Possibly, but never Actually: because if it should once be Actually Divided into all its Divisibles, then it should cease to be alway Divisible (which is a most true and evident Ratiocination, supposing such a Perpetual Divisibility thereof, wherof I shall hereafter discours) But no Possibility whatsoever, either Precedent, or Subsequent, doth militate against this present Discours concerning the Actual Existence of the World.

IX. This Perpetual Possibility in Futurity is the Duration of Immortal Spirits; which though it may not seem to be the same with Time in a restrained sense (as Time may be distinguished from Duration) yet is the same with it in a general sense. And so the Soul of Man, both in this Mortal Life, and also in his Immortal Life hereafter, shall continue to be under the same Duration; though his Time may be restrained to this Mortal Life, which hath an End, and is computed according to the Chronology of the Hours, Days, and Years thereof; and so we commonly distinguish between Temporal, and Eternal or Everlasting. Thus *Plato* makes all Time to be the Measure of Duration according to the Motion of the Heavenly Bodys, which divideth it into such Parts or Sections thereof: and thereupon, I suppose, grounded his Opinion of the Circular Revolutions of Time, like the Circular Motions of the Heavens. But as Duration was Coetaneous with the first *Chaos* (for there was an Evening before any Morning, or Illumination of the Æther; and three several Days before the Sun and Stars) so the same Duration shall continue when they shall be dissolved; and when Time, in that sense, shall be no more. And yet in all the Perpetual Possibility of this Duration, so far as it shall ever hereafter become Actual, it shall likewise be Actually Finite, as I have already proved. Whereas Proper Eternity is neither in any Precedent, nor Subsequent Possibility; but always Actual, and alway Present, or one Perpetual Instant: which is Divine, Infinite, and Incomprehensible, and of another nature, Infinitely and Incomprehensibly Different from

*The Summ of the whole Discourse, That there was a Beg. &c. 23*  
from any Finite Duration, Actual, or Possib'le, whatsoever; which it doth Comprehend, but not in any maner Confound, or Charge the Temporary nature therof; as I shall shew in the next Section.

X. Wherefore I Conclude upon the whole precedent matter, That every Quantity, that hath Existed or doth Actually Exist, is Actually Finite. And so is every Quantitative thing measured thereby. And that no Imagination, nor Possibility it Self, can make it to be otherwise. Because all Quantity and Quantitative things have Parts, and all Parts are Finite, and therefore whatsoever hath Parts is Finite, and whatsoever is Finite, is Terminated or bounded with Extremitys, or First, or Beginning; and Last, or End; Respectively according to the Parts: otherwise it should not be Finite. And particularly, that time and Duration (which is Successive) and all Temporary and Durable things, had a Realy Precedent and fixed First or Beginning. Now that the force of this most Cogent Argument may not be lost or spent in so large a Dilatation, I will briefly Summ it up in these few and short Propositions, which I shall present to any Man of Reason most strictly to examin, and consider whether he can deny any one of them, or the Consequence of them all, without forfeiture of his Rationality.

I. That every Day is One Day, and of no more nor greater Number, nor Duration.

II. That Yesterday was One Day, Actually Past, and Precedent to this Day; and so all the Days Actually Past and Precedent one unto another.

III. That the whole Number and Duration of all the One Days Actually Past, and Precedent, is as Finite (or bounded with first, or Beginning; and Last, or End) as of any One Day.

IV. Therefore there was a First or Beginning of the whole Duration of all the One Days, Actually Past, and Precedent, as well as of the particular Duration of any One Day.

Wherefore I Conclude according to that right and true Sentence, *Vim inferunt Humano Intellectui qui Mundum affirmant Infinitum ex Finitis Partibus Constantem.*

## SECTION II.



## SECTION II.

GOD, &amp;c.

## EXPLICATION.

The Infinite Creator of Heaven and Earth.

## ILLUSTRATION.

1. *That God is Infinite.* 2. *Of Infinite.* 3. *That Absolute Nothing is Not finite.* 4. *Of Proper and Improper Infinite.* 5. *Of Proper and Improper Not finite.*

I. **W**E have proved that Heaven and Earth, and Consequently the whole World, had a Beginning of Being from Absolute Not being, or was Created; because it is Finite. Wherefore the Creator of all Finites must necessarily be Infinite: for if he were Finite, he must also be Created by another, and so Infinitely. But there can be no such Process Infinite, because it is Successive from one to another, and therefore must be finite, as I have already proved.

II. But because our Understanding also is Finite, and not Infinite; therefore the proper Object thereof must be Finite, and not Infinite: and all the knowledg we can have of Infinite is only from and by Finite. Now we have discovered Finite to be Partial; that is, either a Part or a Whole having Parts. And so indeed not only all Quantity, and Quantitative things, wherof we have discoursed, but also all Qualitys, and Qualitative things, are Finite, because they have certain Degrees of themselves, which are their Respective Parts, or Proportions. And also all Substances or Created Entitys whatsoever either have Parts, or are themselves Parts of the Univerf. And the Univerf it self is only the Whole

Whole of all those Parts whatsoever; and Consequently Finite. Wherefore Infinite must neither be any Part, or Degree, nor any Whole having Parts, or Degrees; otherwise it should not be Infinite, but Finite. Also Infinite, because it hath no Parts, or Degrees, in it self, is not Partial, or Gradual, what it is; but Infinitely without any Parts, or Degrees, One, and All, in it self, and Infinitely comprehending all Finites: for if it were more then One, or less then All, it should be Partial, or Gradual; because More, or Less, are Partial, or Gradual, and consequently Finite. Thus Infinite doth Transcend Finite, not Finitely, by any Parts, or Degrees whatsoever; but Infinitely, according to its own Nature, which is Infinite. Wherefore also Finite cannot be any the least Part, or Degree of Infinite; for then the Whole also should be Finite. And Infinite doth not only Infinitely Transcend Finite; but is also Infinitely Different from it, without any Part, or Degree of Difference. And so though it doth Comprehend all Finites (as we say, Infinite Being doth Comprehend all Finite Beings, Infinite Immensity all Finite Bodys, Infinite Eternity all Finite Time, and Infinite Unity all Finite Numbers) Yet it doth also Comprehend them Infinitely, according to its own Infinite Nature, that is, Incomprehensibly as to our Finite Understanding; and Inconfusedly as to the Finite Nature of the Things themselves: and so God is the only true Transcendent and Eminent Cause neither Confounded, nor Compounded with them; nor such as doth Contradict, Alter, or Interfere with them, in any kind or manner whatsoever. And whereas Infinite and Finite do thus Consist together, and yet Infinitely Differ, we must alway reserv the Notions thereof under most Different and Distinct Considerations; and not Confound them one with another in our Understandings, which are not Confounded in themselves; otherwise we shall thereby also Confound our own Understandings, and disturb any right Apprehension, either of Infinite, or Finite. Thus is Infinite both the Infinite Affirmation of all Being, and Welbeing; and the Infinite Negation of all Notbeing, and Ilbeing: which Negation being double, is only the Infinite Affirmation of it self.

III: As Infinite is Infinitely Affirmative, so Absolute Nothing is Not-finitely Negative, or the Notfinite Negation of all that



is Affirmative. And any Affirmation of it self, as that Nonentity is Nonentity, and the like, is only the Notfinite Negation of it self. Wherefore Absolute Nothing is so purely Null, that as *Plato* rightly saith, it is altogether Ineffable, and Incomprehensible, and not capable of any Name or Notion, but what is borrowed from thing, or Being, wherof it is the Notfinite Negation: and therefore I rather chuse to term it Notfinite, to restrain it to the Negative Signification of it self, which purely is not; then Infinite, which hath also an Affirmative Signification of what it is in it self Infinitely, and wherof Notfinite is the adequate Negation, and as Notfinitely Notfinite as Infinite is Infinitely Infinite.

IV. But Infinite is either Proper, or Improper. Properly Infinite is only God; who as he is Infinitely One admits only an Identical Predication of Himself, or That God is God, for *Quicquid est in Deo est Deus*. And yet as he is Infinitely All, and the Transcendency of all Finite Perfections which are many and several; so there is Improperly Infinite, which may Improperly be Predicated of him severally according to our Finite Understanding, and his Infinite Condescension thereunto. And such are all those Partial and Distinguishing Notions which we frame of him. As that he is Entity, Immensity, Eternity, Unity, and the like: Whereby we render that which is Infinite, and Infinitely One in Himself, and with Himself, Partial, and Several, and Consequently Improperly Infinite; but not Properly Finite: for though thereby we render that which is Infinitely One in Himself, Many in our Understanding; Yet we also acknowledg him to be Infinite Entity, Infinite Immensity, Infinite Eternity, and Infinite Unity, and not More, or Less. Again more Improperly Infinite is that which is Properly Finite in it self, but Improperly Infinite in respect of God who is Infinite; as Sin (which is committed against him) is therefore by Divines said to be Infinite: and so indeed is every Creature in respect of him, who is the Infinite Creating Cause, and Being of the Being thereof. But most Improperly Infinite are such things as are only Indefinite unto us, or exceed our Finite Understanding. So we say that the Globe of Heaven and Earth which is Finite in it self, is Immense, and the World Eternal, and the Dust of the Earth Innumerable, and the like,

like: And so we term a Circle Figuratively and Hieroglyphically Infinite, and the like.

V. Also Notfinite is either Proper or Improper. Properly Notfinite is only Absolute Nothing, wherof there can be no other Proper Predication then that it is not; or Nothing is Nothing. Improperly Notfinite is either that in it self, wherof we frame some Partial and Distinguishing Notions; as Nonentity, Vacuity, Nontime, Nullity, and the like; which are only Particular and Respective Negations of that wherof Absolute Nothing is the Absolute Negation. Also there are other more Improper Notfinites, answerable to such Improper Infinities, which we have before Specified.

### SECTION III.

#### Created, &c.

#### EXPLICATION.

Caused the Finite Being of Heaven and Earth by his Infinite Power to Be from Absolute Notbeing.

#### ILLUSTRATION.

1 *Of Infinite Power.* 2 *what Creation is.* 3 *Of the Possibility of Creation by Infinite Power.* 4 *Of the Impossibility thereof by Finite Power.* 5 *Of Annihilation.* 6 *Of Proper and Improper Creation.* 7 *Of Proper and Improper Annihilation.*

I. **H**AVING proved that there was Actually such a Beginning of the Being of Heaven and Earth, and of all things therein, from Absolute Not-being; and consequently a Creation; I need not now to prove the Possibility thereof; because it Actually was. Yet farther to confirm it, I shall proceed



28 *What Creation is. Of the Possibility of Creation by Infinite Power.*

to examin and refute the Grand Argument against the Possibility thereof, *Ex Nihilo Nihil fit*. Absolute Impossibility is that which no Power can Possibly reduce into Act or Actual Being; Wherefore whatsoever may be so reduced is Possible to Infinite Power, which should not be Infinite, if any Affirmative Act should be Impossible unto it: for then it should be Limited by Something Possible which it cannot Act, and consequently be Finite. Thus Infinite Power must Necessarily be Omnipotent or able to Act all things, except Contradictions, which are only the Negations of itself, and consequently infer a Notfinite Impotence. And not to be able to Act such Negations is a double Negation; which as I have said, is only the Affirmation of it self. So God cannot Contradict Himself; either in Essence, as not to be God, or not to be Infinite, which is the same; or in Operation, as to make the same Thing to Be and Not be Absolutely; for then he should undo what he doth. And so God cannot make Absolute Nothing or Notbeing to Be; for then it should Be and Not be Absolutely, which is an Absolute Contradiction. Neither can he Convert Absolute Nothing into Something, or Extract Something out of Absolute Nothing; for then it should not be Absolute Nothing, out of which there is Nothing which may be so Converted, Extracted, or Made, in any kind or maner whatsoever.

II. So that if to Create were any of these Operations, as the Objection doth import, then it should be confessedly Impossible. And I suppose some such Misapprehension hath been the ground of that Error. Whereas Creation rightly understood is only a Causing Finite Being to be from Absolute Notbeing, as the Negative Term, from which it doth Commence; and not of which or out of which it is Made in any kind or maner whatsoever. Now because Absolute Nothing or Notbeing is only a Negative Term or pure Negation, it can neither resist Creation, nor contribute any thing to, or toward it; because it is Absolute Nothing.

III. And because Absolute Nothing cannot resist in the least; therefore Creation is Infinitely Possible to Infinite Power; because there is Nothing to resist it. And also because whatsoever

is Possible to Infinite Power, is Infinitely Possible to it; and not Partially, or Gradually; because Infinite hath no Parts, or Degrees. Nor doth the Creation of Finite Being Contradict, or Alter, Augment, or Diminish, Infinite Being, or Notfinite Not being. And so the present Finite Being which is Created (as we have already shewed) doth not Contradict, Alter, Augment or Diminish, either of them, which are Eternally the same in themselves.

III. But because Absolute Notbeing cannot contribute any thing to, or toward, Creation, therefore it is Impossible to any Finite Power: for Absolute Nothing doth afford no Matter, Principle Preparation, Inclination, Capacity, or any Something whatsoever; whereupon, or whereby, Finite Power may begin to work; and where there is no Beginning, there cannot Possibly be any Progress, or Perfection thereof by any Finite Power; but only by Infinite Power, which can Create Being, and the very Beginning thereof from Absolute Notbeing. Also all Finite Power it self before it was Created was absolutely Null; and so had no Power in it Self to Create it self, or any other Being, from Absolute Notbeing. Nor could God himself Delegate this Infinite Power to Angels or *Demons*, or any Rabbinical or Platonical Subcreators; which must be either Totally, or Partially, not Totally; for then God should cease to have or be Infinite Power in Himself, and consequently to be God; which is an Infinite Contradiction, nor Partially; for Infinite hath no Parts. Certainly no Angel, nor Man, the chief of Natural Operators, did ever arrogate unto himself a Creating Power. Nor have we any Instances of Creation in the whole History of Nature, among all those Monstrous Relations, which the Writers thereof have inserted. Nor hath any Poetical Fancy ever Invented or Imagined a *Metamorphosis* of Being from Notbeing. Much less hath any Philosophy ascribed this Creating Power to Nature her self; but rather denieth a Creation; and yet to solv it, is forced to substitute an Impossible Eternity of Finite Nature; and certain Fictitious Powers, Eminences, and Equivocal Causalities, which I shall also examin hereafter.



V. As Creation is a Causing to be from Notbeing, so Annihilation is a Causing Not to be from Being; which is most Possible to the Infinite Creator; because it is only the withdrawing his own Infinite Power, whereby he doth continually Cause the Creature to Be; but Impossible to any Finite Power; because it cannot resist the Infinite Creating Power, which doth so continually Cause the Creature to Be. And as there can be no Annihilation by any Finite Power; So we never read of any by Infinite Power: Nor probably will God ever Annihilate any thing which he hath Immediately Created; for he doth nothing in vain, but continueth and reserveth all things, which he hath made by Proper Creation, for his own Everlasting Glory.

VI. Thus to Cause to Be or Continue to Be from Absolute Notbeing is Proper Creation. But there are also Improper Creations, which do not produce or preserv any Being from Absolute Notbeing: but only alter the Created Being in such a Supernatural manner as is beyond all Natural Generation, or any other Natural Power of the Creature: which being Finite, and no more then it is; as it cannot Create without Infinite Power, which it hath not; so neither can it Act any thing beyond that Finite Power which it hath. And thus, though it is the Opinion of Divines that God Originally Created nothing after the Beginning, except Souls of Men (or Angels if they were not Originally Created in and with their Heaven) by Proper Creation; Yet God is said to Create in all the Six days, and expressly in the Fifth day to Create great Whales (though it be also said that the Waters Produced them aswell as others) by Improper Creation, which was his Immediate Ordination of the whole Frame and Course of Nature, and Original Generation of them all: which the several Creatures in their First *Chaos* (before their Active Qualities and Mould Forms were Produced, and all other previous and requisite Matters Powers and Instruments were prepared and adapted by God) could not perform in or by themselves, nor Generate others, untill they were so fitted and instructed, and the Divine Blessing of Multiplication added therunto, as I shall shew hereafter: and therefore all those Works of the Six Days, which did Succeed the Original and Proper Creation

*Of Proper and Improper Annihilation. Of Heaven and Earth.* 3<sup>I</sup>  
 Creation in the Beginning; were Improper Creations. So also all  
 Positive Miracles, which are Preternatural, or beside the Natural  
 Course and Order, are Improper Creations.

VII: Proper Annihilation is a Causing any Being not to be Absolutely: and improper Annihilation only a Preternatural Alteration therof. And as God in Positive Miracles doth work beyond Natural Power, so in other Privative Miracles he doth obstruct and suspend it. As in causing Iron to swim by suspending the Gravity therof; or fire not to burn, by Suspending the Heat therof, and the like.

### SECTION IIII.

## **The Heaven and the Earth, &c.**

### EXPLICATION.

The whole Body of the World, consisting of Several Heterogeneous Members, Heaven, and Earth; which were Created together in the Beginning.

### ILLUSTRATION.

- I. *Of Heaven and Earth.* 2. *Of Heaven.* 3. *Of Earth.*  
 4. *Philosophical Considerations of Entity, and the Differences therof.* 5. *Of Substances and Accidents.* 6. *Of Matter and Forms.* 7. *Of Common and Proper Accidents.*

I. **W**E have heer a brief Description and Map of the World, and of the whole Globe of the Matter therof, from the utmost Circumference to the inmost Center, which was all Created in the Beginning: for neither do we read, nor can we reasonably suppose, that any new  
 Matter



Matter was Created afterward. Nor was it Created in the very Beginning only Matter, or one Homogeneous Mass thereof; but one Body, expressly distinguished into several Heterogeneous Members, Celestial, and Terrestrial; or Heaven, and Earth. Nor was the Heaven and Earth thus only Different in Nature, in their First Creation, but also Distinct and separate in their Situations, and not Confounded together, but Created such several Members of the great Body of the World. And as the Heaven is named before the Earth, so were the Celestial Bodys above or without the Terrestrial, incompassing them as now they do: for neither do we read, nor can we reasonably suppose, that there was any other Separation or Disposition of the Celestial Bodys afterward; as is expressly mentioned of the Terrestrial, or Terraqueous Globe: wherof, and of all their several Situations, I shall further discours heerafter.

II. The word Heaven, Hebraicely is Heavens, not only Grammatically (as the word God in this Text) but Physically, and in the nature of the thing it self. And so generally the Hebrews distribute Heaven into three several Heavens of three several Natures. Wherof the highest is also called the Third Heaven; because it is Utmost and the last above us, and encompasseth both the others; and this I shall therefore call the Superæther. The midst, or Second, is the Æther, or Starry Heaven. The lowest or First, is the Air which Immediately encompasseth the Terraqueous Globe. And these are all the Celestial Spheres wherof we read, and therefore I can acknowledg no more however Astronomers have pleased to multiply them. These three Heavens are thus built one upon another, and all upon the Terraqueous Globe, which is the Habitation of all Corporeal Animals: as Amos elegantly expresseth it, *He that builded the Storys of the Heavens, and founded his Troop on the Earth.* Of all the three Heavens the Third, which is the Supreme, is most Properly Heaven; and therefore also is called the Heaven of Heavens, by way of Excellency, and so is specially called the Temple of the most high God; and is the Native Region and Province of Blessed Angels, or *Calum Angelicum*; and shall be the Everlasting Habitation of the Spirits of Just Men, or *Sedes Beatorum*. Wherof we have no farther discovery, then only that

it was Created together with the other two Heavens; and so is Comprehended under one Common Name with them: and probably because it was made Perfect in the Beginning or first Instant of the Creation thereof, and so must continue for ever, without any Elementary Mition, Generation, or Corruption; therefore we have no other account thereof among all the Works of the Six Days; wherein the Elements, and whole Elementary Nature, and the Course of Generation, and Corruption therein, was Set in order. And accordingly I observe, that whereas the other two Elementary Heavens, Æther, and Air, are called *Expansa* and Firmaments, this Superæther is never so termed; but only Heaven, probably because it is not capable of Expansion or Compression. But as the Divine Wisdom hath concealed any farther notice thereof, and also given us very little Knowledge of the nature of Angels, the proper Inhabitants thereof, as Impertinent for us to know in this present State; so I shall not presume farther to inquire therein, or discourse thereof: and indeed if the Hebraical Word Heavens be dually rendered, it must be intended only of Æther, and Air.

III. As the Æther and Air are Elementary, and both of them Heterogeneous from the Superæther, and every of them one from another; So are all of them from the Earth, and Terraqueous Globe. And as Heaven generally Comprehendeth all the three Heavens, so here also Earth Comprehendeth both Earth, and Water; which were afterward formed into one Terraqueous Globe: and by that general Name in this Text is not only to be Understood Earth particularly (which was not so termed until the Third Day, and then also is called Dry Land) nor the Terraqueous Globe such as it was made afterward; but the Orb of Earth and the Water above it, which is also mentioned afterward. Thus we have a Discovery of what was Created in the Beginning; that is, Superæther, which is also Superelementary and Æther, Air, Water, Earth, which are the lower Elements; as God the Creator hath declared, and *Moses* revealed them unto us, both in this Text, and in the Context, whom I shall believe before all *Athens*, or any Modern Conceptions whatsoever; and shall accordingly prove them hereafter. And now upon this Subject Matter proceed to discourse; and first enter upon such



Philosophical Considerations thereof as may concern them all, and all Creatures Generally; and so according to the order of this History of the Creation Expatiate into more Particular Contemplations of their several Natures afterward. The first and most Universal Consideration of Heaven and Earth, and of all Creatures whatsoever, is that they are Entitys; for since Creation is of Being from Absolute Nothing, whatsoever is Created must necessarily Be; otherwise it should not be Created. So that an Entity is any Thing that Is, which I confess, is no more in effect, then that an Entity is Entity: whose Subject and Præjudicate, *Genus* and Difference, is, and must necessarily be the same; because it is the same *Genus Generalissimum* of all Things without any Specific Difference. And heer I must also premise that in every Perfect and Proper Definition of any Specific, or more Particular Thing, the Specific or particular Differences thereof must be Identical; because the Specific or particular Essence or Entity is the only true Specific or Particular Difference of every thing. But because we cannot know Essences as they are in themselves, therefore we declare things by their Propertys, which is rather Description then Definition. As in the Common Instance, *Homo est Animal Rationale*, Rationality is not the true Specific Difference of Humanity, though it be most Proper to Man; because it is not his Specific Essence; and therefore doth not Define the Humanity it self. Nor doth it indeed Comprehend all the Properties thereof, as Ristibility, and the like; but only Describe it by one Proper Faculty. So that the most Proper Definitions are only Vocubularys and Nomenclatures, which yet are of good use to explain one Term by another; whereby we may avoid all needless Caption and Contention about Terms, and when the Thing intended thereby is clearly understood, it shall suffice me. And I have now made this Digressive *Parenthesis*, to save my Self the whole labor of Defining, and the expectation of any who otherwise perhaps might exact it of me: but I shall use as clear and pregnant Declarations or Descriptions as the Thing will afford. Thus I affirm Created Entity to be a Creature, or whatsoever is Created which is also Convertible with it. Again because the Created World doth Consist of several Heterogeneous and different Entitys and Natures (into which Differences

we

we must also inquire) I affirm such a Different Entity to be whatsoever God hath Created Different in Nature from another: for as whatsoever he hath Created must Necessarily Be; so whatsoever he hath Created Different must necessarily Differ. Now heer we must Consider a Difference which Scholemen have made of Entity it Self; which is, that it is either Entity Real, or Entity of Reason: Entity Real is in the Thing it Self and Nature thereof; as Heaven, and Earth, and all things therein; Entity of Reason is in our Reason or Mind; as the whole Poetical World, and all things therein; Hircocervs, Hippocentaurs, and the like; which are therefore also called Entitys; because our very Imaginations and Fictions thereof are Creatures, and Entitative, though the Imaginary Figments themselves are as it were our Creatures, and Objectively Nothings. And so also there are Entitys of Sense, as all Deceptions of the Senses: for though there be no such Objects, yet there is Really and truly such a Sensation, as well as when the Objects are Real and true, as I shall shew heerafter. Now as Entitys Real and of Reason are both Entitative, So there is such a Diversity of Entity it Self, Respectively, and Improperly: But as Entitys of Reason are Objectively Nonentitative, So also there is Absolutely and Properly no Difference, but a plain Contradiction between them, and Real Entity; as a Number, and a Null or Cyphar, do not Properly Differ, but Contradict one another because one is, and the other is not. Wherefore all Real and true Difference must be between things that are truly Real; and again whatsoever things are Real may Really Differ from others in the Things themselves and Natures thereof. So that Real Difference is not only Corporeal, or of things whereof there is or may be a Local Separation, but also of any other Thing or Entity, though not Separated or Separable Locally: for though Entity it self be only Generical, yet there are also Specific and Particular Essences, and Differences. Thus an Angel in a Body, and the Body, are Really Different Specifically in the Things themselves, and Natures thereof; though not Locally Separated, yet as truly as when they are Locally Separated. So that their Difference is not only from their several Localities, but from their several Specific Natures. So also the Soul, and Body of Man, are now Different, though not yet Separated, but only Separable by

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Death,



Death; and shall be Different after the Resurrection, when they shall be Inseparable, as well as after Death and before the Resurrection, when they shall be Locally Separated: and So Heaven, and Earth, also Differ, not only because they are Locally Separated, but also because they are Heaven, and Earth; that is, Several Natures Specifically Different. Also there may be an Individual Difference where there is no Specific Difference, as in a Legion of Angels, or Men; Lastly there is a Numerical Difference where there is no Individual Difference; as all the Members of a Body are so many as they are Numerically, but yet do not Differ Individually: otherwise it should not be one Body, or Individual Composition thereof, but so many several Individuals, as there are Members. But whatsoever doth Differ in any other kind, doth also Differ Numerically; because Number, or Quantity Discrete, is Comprehensive of all Differences, Diversities, or Discretions whatsoever. And now I shall Conclude that whatsoever God hath Created, and is in Nature and Not only in our Reason or Mind, Really is: and whatsoever God hath Created Different, and doth Differ in Nature, and not only in our Reason or Mind, is Really Different: which I suppose None can Deny, and according to these Undeniable Rules I shall proceed.

VI, The first Real Difference of Entity is that it is either Substance, or Accident. And now (because I know I must fight out my way by Inches against all Sceptical Disputers) I shall proceed as clearly and firmly as I can. And first I shall explain my Terms. By Substance I intend an Entity Naturally Subsisting in it Self, and from which other Accidental Entitys do Naturally Flow, and Subsist therein. By Accident I intend an Entity which doth Naturally Flow from and Subsist in a Substance. So that Substance is both the Original Fountain, and Continual Foundation of any Accident, *Cujus Esse est Inesse*, which some cavill against, because they do not Understand it; though it is very true, and rightly said of an Accident, that it is the Accident of a Substance and in respect of the Substance: as it may be also said of Substance in respect of Accidents, *Cujus Esse est Subesse*. But as all particular Substances, Matter, and Forms, have their own Specific Essences or Entitys, So also have all particular Accidents Extension,

Extension, Figure, Density, Gravity, Motion, Heat, Light, and the rest. Also though all Accidents do Originally Subsist in their Substances; yet Derivatively one Accident may Subsist in another; as Figure in Extension, Gravity in Density; and they Immediately, and the others Mediatly, in Matter. Also Several Accidents may Subsist Immediately in the same Substance; as Extension and Density in Matter, which is one most Simple Substance. And one Accident doth so Subsist in another, if it be a particular Product, Property, or Affection therof; as Figure is of Extension, or Gravity of Density, and the like. Now Accidents are therefore so called; because they are Adventitious to the Substance, wherof the Specificall Essence, as I have said, is in it Self, and doth not consist in any, or all the Accidents therof; nor is, or can be Altered, or made More or Less, by the Variations therof; and also because Accidents in themselves do sometimes Actually Exist, Appear, and Exert their Operations; and sometimes only Subsist Potentially, and are Latent and Quiescent in their Substances: as may evidently appear by all the several Variations of Accidents, the Substance remaining the same; because it doth alway Subsist in it Self; and therefore always is Actually what it is in it Self: for if it should be Potential, then the Potentiality therof not Actually Subsisting in it Self, should Subsist in another; and Consequently be an Accident, and not a Substance. And thus every Entity which is Created, and cannot be Annihilated, must necessarily alway Subsist either in it Self, or in another Actually, or Potentially; But because Accidents Affect, and indeed Perfect the Substance, therefore they are also called Affections; Now that there are Substances, I Suppose, none will Deny who acknowledged any Actual Entitys: and that there are Accidents, none can deny who hath the use of his Senses; wherof all Sensible Accidents are the Proper Objects: and Objects of Intellect are only understood by Objects of Sense. So that indeed all our Conversation is Immediately with and by Accidents; and we neither know Essences of Accidents, nor Substances, otherwise then by their Actual *Phænomena*, or Appearances: Nor can Substances Operate any thing without the Actual Operations, of Accidents. Wherefore, that I may not fight as beating the Air, nor Contend for that which will and must be yielded, I shall more directly



oppugn that wherein I conceive the greatest strength of opposition to ly, and accordingly address my Self to prove that Accidents are Really Different from their Substances: whereby I shall also prove that both Substances and Accidents Really are; because any Real Difference is only between Real Entitys. Now as I have said before God in the Begining Created Heaven and Earth, and all other their Primitive Entitys therein, which yet did not then all Actually Exist, Appear, and Operate: for it is said expressly, that there was yet no Light in the Heaven, but Darknes was upon the face of the Deep; and of the Earth that it was without form and void: and if they had been otherwise Created in the Begining, all the ensuing Works of God in the Six Days had been needless and Superfluous. Whereas Elementary Substances and the Essence of their Accidents in their Potentialitys being Created together in the Begining, the work of the Three first Days was to Produce their Accidents out of Potentiality into Act; as I shall particularly shew heerafter. And though this was not Properly Creation of any New Entity from Nonentity; yet as it was the Production of the Actualitys of the Accidents, and not of the Substances of the Elements, it plainly Discovers a Real Difference between Substances, and Accidents. Certainly as it was the Production of Several Actualitys therof in several Days, it declares the Accidents so severally Actualized to be several and Different in themselves; and much more all of them to be Different from the Substances, from which they all Differ more Generically, and consequently more then one from another. Again if Substances and Accidents did not Really Differ, then no Accidents of the same Substance should Really Differ one from another, but all should be one and the same with themselves, as well as with their Substance: For as the Mathematical Rule is most true, That if each of two Lines be Equal to a third, one of them must necessarily be Equal to the other. So if each of two Entitys, could be one and the same with a third, the one must Necessarily be one and the same with the other: and so if Extension, Figure, Density, Gravity, Motion, Heat, Light, and the rest, and all the Several Variations therof, were one and the same with the *Aethereal Substance*, then they must also be one and the same in themselves: Yea if they were only Accidents of the Matter, as some affirm all Contrary

Qualitys,

Qualitys, Heat and Cold, and the rest must be one and the same with the Matter; which is most Absurd and Irrational: for then Heat should be Cold, and Cold Heat, and the like. Also if we Consider the Continual Sensible Variations of Accidents, and their Productions out of Potentiality into Actuality, and Reductions from Actuality to Potentiality, whereby they so often Appear and Disappear unto us, and their Desultory and Exile Nature (which to some scarcely seems to be Real) we may not Imagine them to be Really the same with their Substances, which Subsist in themselves, and are Fixed, Solid, and Substantial Entitys; and therefore always are Actual, and never Potential, as I shall particularly shew heerafter in all the ensuing Discourses. Wherefore I Conclude that Since there are such Substantial, and Accidental Entitys, and that they Differ one from another, in Nature, and not only in our Mind and Reason; that they both Really are; and that Accidents Really Differ from Substances, and also one from another.

VII. Substance is either Matter, or Forms; (for I must use that Common Term untill I can substitute another) And because, as I have said, we know Substances only Intelligibly, by their Sensible Accidents, I shall accordingly by them declare what I intend by Matter, and what by Forms, Matter is known by Corporeal Quantity, which is the Proper Accident therof. And this Quantity is either Extension, and the Products or Propertys therof, Figure, Porosity, and the like; or Density and the Products or Propertys therof, Gravity, Corporeal Motion, and the like. Also Matter hath a Common Receptivity of Forms, and is Passively apt to be Consubstantiated with them, and is as the Body therof, being in it Self one Homogeneous and Uniform Moles, or Mass; and is also the Passive Subject of all its own Corporeal Variations, which are Superinduced in it by the various Activitys of Forms. Whence it is rightly called *Materia*, which the Forms, as Architects, do severally Mold and Fashion into fit Bodys for themselves. And therefore I Describe Matter to be One Passive Substantial Entity or Common Body of Forms. Again Forms are known by their Qualitys, which are Generally Active, as Heat, Cold, Moisture, Drines, and the like; and are  
not



not only Various, and Innumerable to us, but also many of them Contrary one to another: whereby I know their Substantial Forms also to be Several, Heterogeneous, and Difform: wherof some are apt to Consubstantiate themselvs Subordinately with the Passive Matter, which they as Spirits, do Actively Inform or In Spirit, as all Inferior Forms or Spirits; and some do not Consubstantiate but only Inform it; as the Human Spirit; and some neither Consubstantiate nor Inform it, as Angels: and though all Exist in it, yet none Subsist in it, as Accidents do in Substances; And so these Forms are Several Active Substantial Entitys or Spirits. And I shall henceforth generally call them Spirits; Wherby I do not intend Spirit Grammaticaly, that is Breath; nor yet with Physicians, and others, those Igneous Aereous, Aqueous, and Terreous, Natural, Vital, or Animal Spirits, which indeed are only such Qualitys of the Elementary Spirits; but Substantial Spirits Distinct or Different from the Matter, as I have before discoursed them. And so there are not only Angelical Spirits which Exist Separate from the Matter Naturally, though in it Locally, and Human Spirits which are also Immaterial, and such as may so Exist separately, as well as Angelical, and yet are apt to Inform or In Spirit the Human Body wherwith they are Composited, But also Material Spirits, which cannot so Exist Separately, or as Separate Substances without the Matter, and therefore are called Material, though they are in themselvs neither Matter nor Homogeneous with the Matter as I shall shew heerafter. And so the Wiseman mentioneth *The Spirit of a Beast that goeth downward to the Earth*, as well as *the Spirit of Man that goeth upward*. And so also there are Vegetative Spirits, and the Spirit of the Heaven (as the Author of *Esdra*s saith of the Firmament) and of all the Elements, (which are more Properly Material becaus they Immediately Consubstantiate Matter) that is, such Active Substantial Entitys, as I have before Described. And there are also Accidental Spirits or Spiritual Activitys Powers, and Virtues mentioned in Scripture. Which yet are no Substantial Spirits, but Subsist in them. And I suppose this general Name Spirit doth better expresse all simple Substantial Activitys (which were Immediately Created by God, as well as Matter, and can never be Annihilated or Altered as they are in themselvs, any more then Matter it Self) then Forms  
by

by which they are commonly exprest as well as *Forma Mistorum*. And therefore I do not term them Forms, (but I rather reserve *Form* to exprest that which is otherwise called *Forma Misti*, or *Compositi*, by which I intend only the Generative Complexion and Compagination of those simple Created Spirits and Matter which are Ingenerable and Incorruptible in themselves; and wherof Generation and Corruption are only the Confabrication, or Demolition; as I shall shew heerafter: and consequently every *Forma Misti*, or *Compositi* is Generable and Corruptible: and so these Forms are as far Different from the others (which I therefore term Spirits) as they are from Matter; and are called Substantial only becaus they are the Complexions of the others, which are Substances as also Material Spirits are so called only becaus they are so United to the Matter, as I said before. Having thus explained my Terms, I shall proceed (as before concerning Substances and Accidents) to prove that Matter and these simple Created Spirits Really Differ, whereby I shall also prove that there Really are both such Matter and Such Spirits. And wheras it is now generally granted that there are such Angelical and Human Spirits Really Different from Matter (for which, I suppose, we may thank Christianity) I shall accept it; and apply my Self only to prove the same of the rest; and then I presume no Heathen can deny it of the others. Now in our present History of the Creation it is said that the Water brought forth Fishes after their Kinds, and Fowls after their Kinds, and the Earth Beasts after their Kinds, and Creeping things after their Kinds. Whereby it appears that these Creatures were of Several Kinds, and Heterogeneous one from another, and Consequently all of them from the Matter; which being one Homogeneous Substance in it Self can never Produce any Heterogeneous Substances; and therefore all this Heterogeneity must necessarily be from some other Substantial Principles; that is, their Spirits: which were Created thus Specifically Heterogeneous one from another, and all of them more Generically Heterogeneous from the Common Matter. And so it is also expressly said concerning Vegetatives; and must be reasonably understood of Heaven, and Earth, and all the Elements: for the Matter of them all being one and the same could not Constitute and Denominate them Heaven, or Earth, neither could they be so Denominated from their own Proper



Qualitys, which were not yet Actually Produced, but afterward in the Three first Days. Wherefore there were such several Heterogeneous Substantial Principles (which I call Elementary Spirits) Created in the Beginning and then Actually Subsisting in and with the Matter, which did so Denominate the Heaven and Earth, and the rest. And if they together with the Matter could not Produce their own Proper Qualitys, without such a Supernatural, though Improper Creation; much less could the Matter of it Self Produce any Such Substantial Spirits, and Activitys, farr more excellent then it Self. Again if Accidents of the same Substance being Several must therefore Really Differ from the Substance, as I have before proved, then certainly Accidents of Several Substances, which are not only Several, but also Contrary, do necessarily prove that they can not proceed from one and the same Substantial Principle, such as Matter is: for then the same Nature should destroy it self by its own Natural Contrariety. And though in Mist Bodys which are Composed of all the Elements there be the Substantial Principles of Contrary Qualitys, Heat, Cold, Moisture, Driness, and the like Mist and Contempered together, or though the same thing may Produce Contrary Effects in Several Subjects, as Motion may excite Heat in Fire and Cold in Air, or the same Faculty may exercise Contrary Actions toward Contrary Objects; as the Will or Appetite doth Affect that which is Pleasant, and Disaffect that which is Displeasant; Yet Matter, which is one and the same, cannot Produce Contrary Activitys, and Exercise Contrary Operations in it Self, which destroy one another, and so consequently should Corrupt it self by such Contrary Qualitys. Wherefore all Generation and Corruption, and all *Menstrua*, and the like, do plainly prove that there are Several Substantial Principles of Such Contrary Qualitys, not only Really Different from the Matter, but also Differ from one from another. And therefore, unless we affirm Heat, Cold, Moisture, Driness, and all other Contrary Qualitys, and Consequently Ether, Air, Water, Earth, Vegetatives and Sensitives to be all one and the same and not Different; and thereby Confound Heaven and Earth, and all things therein, and our own Notions therof, we must Necessarily grant that there are such Several Accidental Qualitys, and also such Substantial Principles.

Principles thereof, Different one from another, and consequently all from the Matter. And this may appear most clearly by many Sensible Distinctions and Differences between them, which I shall now only generally mention, and hereafter more particularly discover in the ensuing Discourses. As that Matter hath *Pondus*, and the Products thereof which Spirits have not: but there are Active *Potentia* of Spirits and all the various Operations and Effects thereof, which Matter hath not: And the *Pondus* of Matter tendeth from the Circumference to the Center, but the *Potentia* of Spirits from the Center to the Circumference. And Matter being only one Homogeneous Body hath only one Center; but Spirits being Many and Several have every one of them in their *Composita* a several Center. Also all Matter is Continuous; because it is one Homogeneous Body; but the Contiguity of several Bodys is only from the several Spirits. Also Matter tendeth Naturally to Rest, but Spirits intend their Acts and Exercises to the Utmost. Also Matter hath only Different Degrees of More or Less; but Spirits have their Actively Contrary Qualities, and the like. Now though I cannot Sensibly Produce and Present such a *Genius* of things or Spirit, as it is in it Self; not only because it is a Spirit, but also because it is a Substance; which as I have said that it is only Intelligible (as none can discover Pure Matter, or *Materia prima*, as it is in it Self, but both may be discerned by their Sensible Accidents, whereof the Accidents of Spirits, which are Proper Sensibles, are more Sensible then of Matter, which are only common Sensibles and Sensed by the others) so I have proved Matter and Spirits by their Different Accidents to be several Substantial Principles, and Really Different one from another. And though none can affirm that there is any Matter Separate from Spirits; yet it is granted that there are Spirits Separate from Matter, as Angels. Nor may it seem strange that two such Substances should be Consubstantiated into one, since there is no Matter without some Spirit to Diversify it; and it is also granted that there is a Spirit of Man which doth Inform or Inspirit his Body; and not only Possess it as an Angel. Wherefore certainly Material Spirits which are Connatural may also Consubstantiate the Matter. And we must understand that as all Created Entitys are Creatures, or Created by God; so they are



United into one *Genus* of their Common Entity; which though it be Metaphysical, yet it is not only a Notional, but a Real Universality of them all; whereby they are so Really United and accordingly have some Physical Communion one with another, and all Conspire together against Nonentity. And so Matter and Spirits though very Different Entitys; yet because they are all Entitys, either Consubstantiate one another, as all Material Spirits, which cannot be Separate, nor Exert or Exercise their Qualitys or Operations without the Instrumentality of their Material Bodys, or otherwise Inform and Inspirit them, as the Immaterial Spirit of Man: which may be Separate, or not Separate from the Body therof, and Exert and Exercise some Qualitys and Operations by the Instrumentality therof, and some without it, as I shall shew heerafter; or at least as Angels, who though they be purely Immaterial Spirits, and have no such Consubstantial nor Compositive Union with the Matter, nor do Inform or Inspirit it, nor Operate by any Instrumentality therof; but are in that respect wholly Separate from it, yet have this Communion with it, that they are Locally in it, where they are and do Move from one Part or Place therof to another, and more or less suddenly and easily, and can not Move beyond the Universal Body therof; for then they might Wander in Notfinite and Endless Inanity, which as I have said is Pure Nonentity. And though Extension and Local Motion be Properly of the Matter, yet Material Spirits by their Conjunct State and Consubstantiation are Coextended with it, and all others are Contained in it, and in this or that Part therof, and Move from this or that Place therof, according to the several Spheres of their own Substantial Activitys; whether they be more United unto it by a Conjunct Consubstantiation, as Material Spirits; which are in the Matter like Inherent Light in the Lucid Body, and in so much therof as it doth Inherently Illuminate, or less and without any such Conjunct Consubstantiation, as the Human Spirit, which is in the Matter as Light in the Diaphanous Air which it requires to Illuminate; or otherwise as Angels, which are in it as Magnetical Emanations in any *Medium*. And accordingly Material Spirits are most Powerful in their Center, but Immaterial Intirely Equal in their whole Sphere. Now wheras some affirm that Substantial

Spirits,

Spirits, and all their Spiritual Qualities, are only Various Motions of the Matter; I shall according to my manner first endeavour to Understand, what is or may be Intended by the Motion of the Matter; which certainly can not be any Substantial Activity in it Self Distinct from the Matter; for then we might agree in the Thing, and should not differ about Terms: wherefore Motion of the Matter must be only an Accidental Affection therof, (like Extension and the rest whereby matter Extends it Self) and so in Effect Motion of the Matter is only Matter Moving it Self; Whereas it Naturally tends to Rest, and Moves only in order therunto, as I shall shew heerafter; and this Moving must be only Local, becaus it is of the Matter from one Part or Place therof to another. But as I have shewed, that there are other Differences of things besides Local Separation; So there are other Motions, besides Local Motion; as every Mutation from one State to another, in Generation, Corruption, and the like; and in Intellection, and Volition, there may be such Spiritual Motions, without any Local Motion whatsoever, whereas Local Motion is only a Transition or passing from one Part or Place of the Matter to another, as I shall also shew heerafter: And now I may safely affirm that such Local Motion is only Local Motion, and neither more nor less, nor other: for as this Identical Proposition is most true, That Local Motion is Local Motion: So the Predicate therof being Adequate to the Subject, it can be neither more nor less, nor other then the Subject. Now that this Local Motion which Properly belongeth to the Matter is an Instrument not only of Matter, but also of all Material Spirits (beaus they are Material, or Conjunct with the Matter in their Consubstantiation, and also in their Operation, as well as Extension, Figure, and the rest) I easily grant: but must wholly deny that Ether, Air, Water, Earth, or any other Substantial Spirits; Heat, Cold, Moisture, Driness, Vegetation, Sensation, and innumerable other Spiritual Qualities are only Local Motions, one way, or other, or any way whatsoever: for then Local Motion should not be only an Instrumental Causality or Effect, of all those Spirits and Spiritual Qualities, but the very Essence and Formality, or Formal Caus therof; which is most Uncouth and Inconceivable: for they are Formaly every one of them Such



as they are in themselves; as well as the Matter is Matter in it Self, without any Actual Motion: and so also Extension is Formally Extension in it Self, and may Exist and be Such, without any Actual Motion: and Figure is Formally Figure in it Self, and may Exist, and be Such, without any Actual Motion: and so any other Accidents of Matter: much more Spirits and Spiritual Qualities: which I shall now very plainly prove. *In the Beginning God Created the Heaven and the Earth;* and not only Matter and Motion: nor could Matter by Motion Diversify it Self in the Beginning into Heaven and Earth; that is, as I have before explained them, Superæther, Æther, Air, Water, and Earth: for no local Motion can be in an instant; but the Beginning was only the First Instant, otherwise it should not be the First or Beginning: Whereas Local Motion being from Place to Place, which are several Terms, must necessarily be in several Instants: and most Probably there was no Local or any such Natural Motion in the first *Chaos*, but only the Spirit of God Supernaturally Moved on the face of the Waters: Also if several Local Motions were the Formalities or Formal Beings of all Spirits, and Spiritual Qualities, then they should not be before nor after, nor any longer, then the Local Motion doth continue: for the Formality of any thing is the very Specific Being thereof; (as Wind which is indeed only *Aer Motus* continues no longer then the Motion) and Nothing can be without the Specific Being of it Self; otherwise it should not be what it is. Wherefore I suppose I may set this down as another Infallible Canon (according to which also I may safely proceed) that Whatsoever Actually Exists without something which doth not then also Actually Exist, must Really differ from it; otherwise the same thing should Actually Exist, and not Exist at the same time, which is Contradictory, and Impossible. And thus as I have proved Substances, which did Actually Exist in the Beginning, to differ Really from Accidents, which did not then Actually Exist; So particularly Spiritual Substances and their Qualities, which do or may Actually Exist without any Actual Local Motion, must necessarily be Really Different from it. And this is most Sensibly Evident that they may so Exist, and be, without any Local Motion; and when they are in Local Motion, are Commonly rather Causes thereof, then Caused by it; and so they Cause Motion

Motion in the very Matter, which of it self would Perpetually Rest in the Center, and due Position of it Self, as I have said, and shall heerafter prove, and is Disturbed and Moved by the *Potentia* of Spirits, which alter the Natural Position, Figure, Density, and Gravity therof: and Properly it hath no Natural Motion of it Self, but only to restore it Self unto Rest. Nor can the Matter, and Motion, and any or all the other Accidents or Variations therof, Formally Caus the Spirits, or Spiritual Qualitys: but are only Instruments, and fit Bodies therof, which they form for themselves. Take Wax, and Move it this Way, or that Way; or Mold it into this, or that Figure; or Discind it into any Threads or Corpuscles, or Mechanically Vary the Matter therof how you will; yet it will still be Wax, as well as every part of Water is Water; Unless there be also some new Generation, or Corruption, therof by Spirits, and Spiritual Qualitys, as I shall shew heerafter. Wherefore that which some call Texture, whether Extrinsicall, as Figure, Porosity, or plain Interweaving of Threads or Filaments, and the like; or Intrinsicall, as Density and Rarity, (which indeed are the only true Intrinsicall Textures of Bodys and yet are wholly denied by our Textorian Philosophers) as well as Local Motion, is only Instrumental, and no Formal Caus, or Being, of any Spirit or Spiritual Quality. And so take Common Water and Spirit of Wine, Vitriol, or any stronger Spirits; and setting them in their several Vessels one by another, Inspect them with a Microscope; and see if you can discern any such Proportionable and Consyderable Difference of their Extension, Figure, Density, Gravity, Local Motion, or any Corporeal Texture whatsoever, as there is of their Spirits, and Spiritual Qualitys. Or take any Æthereous Globules, or *Materia Subtilis*, Emissent, Transmittent, or Remittent (if you can tell where to find it) or the most Subtile and Pure Air, which may be had on the Top of the highest Mountain, and which is Common Matter as well as any other, and putting this Matter into any Windgun, Airpump, or *Expansor*, or any such *Torcular*, or other Rack of Nature whatsoever, or applying to it any Chymical Fire, or Heat, or Salt and Snow, or what you will, and vex it how you will; and try if you can force it to Confess it Self to be any other thing then Air, or Extort from it all, or any of these Spi-  
ritual



ritual Diversifications, or such as may be Effected by the like Experiments made of Vapor, Water, or Earth, or any parcel or part of the Terraqueous Globe, and *Cortex* thereof. Which God having made to be the Native Countrey, and Region of *Animals*, hath also Impregnated with such Material Spirits, and their Spiritual Qualities, which he did first Produce, and still may be Produced out of them. Wherefore since Matter and Spirits do thus Differ, not only in our Mind and Reason, but in their own Natures, I Conclude them both Really to Be, and Really to Differ one from the other : and not to be only Matter and the Motions thereof.

VIII. Accidents are either Common, or Proper ; Common Accidents are such as were Concreated, and Actually Existed together with the Substances in the Beginning, and without which no Substances, or any Created Entity whatsoever, can Actually Exist : as all Quantities ; whether discrete, as Number : for every Creature that is whatsoever it be, must also be Numerable. Or Successive as Duration : for every Creature that is, whatsoever must also be Durable, or Temporary. Or Consistent, as Extension ; which though it be in it Self Proper to Matter, yet as the Matter of the whole World is a Common Matter, so as I have shewed, it doth Coextend or Contain all Spirits, and every Creature that is in Heaven or Earth must necessarily be Locally therein, that is, in the Universal Body of the Matter, or *Ubi* thereof, and in some Part or Place thereof ; that is, it must be there where it is, and no where else at the same Time. Proper Accidents are such as Originally Flow from, and Subsist in their Proper Substances : as Consistent Quantity, Extension, Figure, Density and the rest in Matter ; and Spiritual Qualities in Spirits. Again these Simple Accidents may be either Compounded together, or Several ; and yet mutually Relating one to another, and Such Relations may also be Real ; as First and Last in Successive Quantity, or Time : for they Really are Such in the Successive Nature thereof ; which otherwise should not be Successive ; and are not only Notional, such as First or Last in Consistent Quantity, or Extension ; for they are not Really such in the Consistent Nature thereof ; because it is Consistent altogether ; and so the First may be Last, or the Last First, according

to our Notion and Institution thereof. Also there are other more Complex Relations which may likewise be Real; either Mathematical; as a Triangle and three several Lines are different things, or Physical, as Beauty, which is a Relative Conformity of severall Lineaments and Colors to the Physical Law thereof. Or Moral, as Virtue; which is a Relative Conformity of Actions, Modes and Circumstances to the Moral Law thereof. Or Theological, as Piety; which is a Relative Conformity of Actions Modes and Circumstances to the Theological Law thereof, and the like. which being more Complex, are also more Curious and Excellent; and the Relative Conformitys thereof are Not only Real, but also the Excellency and Perfections of those Realitys wherein they Relatively and Really Subsist. And this Relative Reality, though it doth Subsist in the particular Entitys wherof they are the Relations, yet doth Consist in the very Relative Conformity thereof: for their particular Entitys being Inverted, will vary them, as a Triangle may so be made a *Zeta* or *Pi*, or render that which was Beautiful Deformed, and that which was Virtuous Vitious, and that which was Pious, Impious. And heer I shall Conclude with this general Observation, That though Substances Excell in Entity, becaus they Subsist in themselves; yet Accidents Excell in Bonity, becaus they Perfect their Substances. For such indeed was that great Difference between the first *Chaos* and the six Days Works Perfected therein.



## SECTION V.

And the Earth was without form and void. And Darknes was upon the face of the Deep.

## EXPLICATION.

The Elementary Globe of Earth, Water, Air, and Æther, was first Created Inform, and Inane; without any of those Actual Compositions, Mitions, Figures, and Virtues, which were afterward Produced in the Six Days.

## ILLUSTRATION.

1. Of the fower Elements. 2. Of the Chaos. 3. Of Quantity. 4. Of Number. 5. Of Time. 6. Of Extension. 7. Of Figure. 8. Of Porosity. 9. Of Density and Rarity. 10. Of Gravity and Levity. 11. Of Rest and Motion. 12. Of Place Space and Vacuity.

I. **W**E have heer a farther Explication in the Text itself of the Heaven and Earth Created in the Begining. Wherof it is again said, That there was an Earth, Comprehending also the Water, as I have before shewed. And the Water is heer called Deep; which generally in the Hebrew Style signifys Deep Water, or Sea (and heer the Element of Water) like *Altum* and *Profandum* in the Latin. Also the Waters are expressly mentioned in the following Sentence. But Earth and Water were not first Created such a Terraqueous  
Globe

Globe as now they are, and were afterward so Divided and Disposed in the Third Day, and then first made to be such an Ocean of Waters and Dry Land both appearing together, and composing one Surface and Circumference of their common Globe; for that was the very Work of the Third Day. Whereas the Platonist saith of this first Creation of the Earth, *Thou coveredst it with the Deep as with a Garment.* And the same is implied heer in these words, *And Darknes was upon the face of the Deep*; that is, of the Waters, which first covered the Earth; and not immediately upon the face of the Earth, which was then covered with the Waters. Also the Darknes, which was the Antecedent Privation of Light, doth imply the Informity and Inanity, both of Æther, which is the Elementary Fountain of Light, and of Air, which is the Vehicle therof to the Terraqueous Globe; and that as the Water was Created above the Earth, so they above the Waters: for it is said the Darknes which was then in them was upon, or above the Waters. And so God saith to Job concerning the Sea, *When I made the Cloud (that is the Dark Air) the Garment therof and thick Darknes a swadling Band for it.* And so also was the Æther, from which the Light was afterward Emitted through the Air to the Terraqueous Globe, above the Air. And this Situation of the Elements may plainly appear by the Order of the Succeeding Creation: wherein the Æther, which is highest and next to the Superæther (which as I have said probably was perfected in the Beginning) was first furnished with Light, and then the Air with Vapors, and lastly the Terraqueous Globe with Vegetatives, in the Three first Days. And so again the Æther with Starrs, and then the Air and Water with Fowls and Fishes, and lastly the Earth with Beasts, in the Three last Days. Also I collect from this Original Situation of the Elements that their Several Bodys of Matter were Proportionable and Conformable therunto; that is, the Matter of Earth was most Dens, and consequently most Grave, and therefore Lowest; the Matter of the Water less Dens, and consequently less Grave, and therefore above the Earth; the Matter of the Air more Rare, and consequently more Light, and therefore above the Water; the Matter of the Æther more Rare, and consequently more Light, and therefore above all the other Elements, and next to the Su-



perather which is most Rare, as a fit Habitation for pure Spirits. And that as every Element had its Proper Body of Matter, so also its Proper Elementary Substantial Spirit Pure, and Unmist in the first Creation therof. And it was the Work of the Spirit of God Moving upon the face of the Waters to Prepare and Pre-dispose them by fit Mition and Temperature of them all; and thereby to Produce their Proper Qualitys out of their Potentialitys into Act, Gradually and Successively. And that their Potential Qualitys, and also all other Simple and Primitive Substantial Spirits, not only Elementary, but in and with them Vegetative and Sensitive, and all their Potential Qualitys, were Created in the Beginning together with the Matter: that is, Vegetative Spirits, and Sensitive Spirits of Beasts in the Earth and of Fishes in the Water: for so it is said, *Let the Earth bring forth Grass, &c.* and again, *Let the Earth bring forth the Living Creature after his Kind, &c.* and so also, *Let the Waters bring forth abundantly the Moving Creature that hath Life, &c.* which plainly implys, that these Spirits were in them before, otherwise they could not so bring them forth. And they were then Latent in those Elements Respectively, which are Predominant in their Composition.

II. Thus was the Inferior Globe of these fower Elements first Created, Inform, and Inane; which is more Emphatically exprest in the Original Language then can be rendred in any other. The Author of the Wisdom of Solomon calleth it *Matter without Form*: that is, without any Corporeal Formosity, or any Mition or *Forma Misti* as they term it. Both Greeks and Latines generally call it *Chaos*; and have preserved the Historical Tradition therof, which they received from Antiquity. But they seem also to Comprehend in their *Chaos* the Superather as well as all the Elements, or otherwise to have had no knowledg therof. Also they Confound all together in one *Congeries*: and thence have fancied that the fower Elements had their Actual Qualitys Existing therein in their highest Degrees, and that there was Extreme Discord and Enmity among them. And so *Empedocles* and others make *Lis* and *Amor* Original Causes of all things; which were, afterward Comtempered therein and the Poet accordingly;

*Aque*

*Aque Chaos densos divum numerabat Amores.*

But upon the Review of our Divine History, as I find no farther mention of the Superæther in any of the Works of the Six Days, and therefore conceive it to have been Perfected in the Beginning and first Creation thereof, (for so it is said of it; *whose Builder and Maker is God*, that is more Immediately and only by a Proper Creation thereof, without any Mediate Preparation Predisposition and Miftion, as of the Elements and Elementary Natures, and so that it was no part of this Elementary *Chaos* which was afterward Perfected in the Six Days) so also I rather conceive that there was only Imperfection in the first *Chaos*; and that all the first Elements were first Created in their several Situations in Rest and Peace without any such Discordant Confusion, which is reserved for the last Dissolution and *Gehenna*. And the Hebraical words, *Inform*, and *Inane*, seem rather to infer such an Emptiness and Privation, then any Positive Contrariety of Qualities then Actually Existing in it: and it is said expressly, that there was Darkness, or *Pura Tenebra*, therein, without any Light; and so probably no Heat; which if it had been Actually Existing in such Extremity thereof might have prevailed over the rest, as it shall in the last Conflagration; or at least would have caused the Vapors to ascend from the Waters before the Second Day; if the Air had all been so prepared by Miftion and the Actual Qualities thereof: But probably there were no such other Qualities then Actually Existing: for if not Heat, then consequently not Cold, which is the Contrary thereof. And the Earth is not Denominated Dry untill the Third Day; and if there were before no Driness, then consequently no Moisture; and so of the rest. And the Author of *Esdras* saith, *There was Silence on every side*, without any Sibilation or Tumult of Heat and Cold or the like. And though not only Matter, but the Created Substantial Spirits of the fower Elements and others, did then so Actually Exist in the Beginning when they were first Created, and the Heavens or *Æther*; and Air, and Earth, or Water and Earth, were thereby then so Denominated; as I have already shewed; yet their first Simple Qualities, Heat, Cold, Moisture, Driness,



and others, which are Accidents, and Subsist in their Substances and were then also Created first in their Potentiality; did not Actually Exist, but were afterward Produced out of their Potentiality into Act in the Six Days. And the Elements, though Created Pure and Unmist severally in themselves, and separately in their own Spheres, yet were Miscible, and their Natural Perfection was to be Mist; and so it was accordingly performed afterward: and by that very Mistion and Temperature their Proper Qualitys were Produced out of Potentiality into Act, which otherwise could not Actually Exist severally by reason of their own Vehemence and Extremity. And certainly there are such Contrary Qualitys, which are not only Degrees or More or Less of the same Mist Quality (as there are Degrees of Corporeal Quantity) which very Contrariety by a fit Mistion and Temperature doth mutually Qualify them, and so Produce them by Degrees out of their Potentiality in Generation; and the Excess of either of them doth again destroy the other in Corruption; and thereby also would destroy itself if it were not so Tempered by the Contrary. And I thus judg therof, becaus otherwise there could be no Mistion or Temperature of Contrary Qualitys in their Actual Extremitys, which would destroy one another: but they are not so Actually Contrary in their Potentialitys (becaus then they are only Potential) whereby they are easily Mist at first, and so proceed by degrees to be both Actuuated together in their mutual Mistion and Temperature. And this Order of Generation and Corruption is the very Courf of Nature that was ordeined in the Six Days. And as in the Begining none of these Qualitys did Actually Exist in their own Vehemence and Extremity, so never since can either of such Contrary Qualitys Actually Exist without the other which should so Temper and Qualify it. Also all Secondary Qualitys which are Compounded of such first Simple Qualitys cannot possibly Exist without such Composition and Mistion, becaus their Compound Nature is to be Mist of others. But though the first *Chaos* was thus Inform and Inane, without any such particular Figures of Bodys, or Spiritual Qualitys, or any such Substantial or Accidental Mistion or Composition; yet as the Matter and severall Elementary Spirits were severally Consubstantiated therein, whereby they were then

then Actually Heaven and Earth, though not such as afterwards, and as now they are; So also we may not conceive them to have been without any Actual Accidents whatsoever; for they must necessarily have those Common Accidents which were Concreated with them, wherof I have formerly discoursed, Actually Existing; becaus no Created Substance whatsoever can Exist or Be without them, and the matter had the general Accidents therof Actually Existing in it. And of these and the Products therof both Common and Proper to Matter, as they were Concreated with it, or wherof it was capable, I shall now proceed to discourse.

III. And first I shall consider Quantity generally: which though it be severally and Specifically Threefold, Number, Time, and Extension; yet all of them are Generically One, or that which we by one common Name call Quantity: and they are so One, not only Nominally or Notionally, but Really and Physically; as shall appear by the Real and Physical Analogy and Confederacy that is between them; which as it is most Proportionable and Regular in itself, so if it were rightly considered in all Statike Machins or Engines, any Artist might thereby without the trouble and charge of Experiment set down in his Mind or Paper before hand what the Effect and Execution will be: and all particular Errors in that Art proceed from the Universal Error or Ignorance heerof. As one saith of their various Essays of a Perpetual Motion; that they have all proved vain and ineffectual, *Non rite observatis Proportionibus*: for what is gained by one Quantity will be lost by others: as what is gained by Distances from the Center, Multiplication of unequal Wheels, and the like, is again lost in the Total Summ of the whole Account of Proportions, in Time, Number, longer, or more Circumvolutions, and the like; which at last cast up together will amount to no more then a Balance, or *Aquipondium*: and these several ways are only several Variations of the Quantities; which yet may be very useful and advantageous, accordingly as we have more or less Weight or Power, or more or less Time, and the rest, to employ and lay out in the Operation. Such are the *Romana Statera*, or French Beam, the Leaver, the Skrew, the Pulley,



ley, the Snake Wheel, Cranes, and the like. And the common Culinary Jack may plainly discover the use and advantage thereof, in Diminishing the Burden of the Weight by Multiplication of the Distances and Revolutions; as if the Weight were divided into so many several Parts or less Weights as it hath such Proportions in the Whole, and one of them only were to be Moved at one Distance and by one Revolution. Or the Burden of the Weight in a contrary way may be Multiplied by Diminishing the Distances and Revolutions. Or there may be a delivery of all at once, as in Catapults, Balists, and the like. And of all these the whole Account will ever be Equal, as I have said (allowing only for Frictions and Attritions, and the like.) And this wonderful Analogy of Quantity is not only thus useful in Mechanical Practice, but also in Philosophical Contemplation; which I shall now accordingly Improve. And because, as I have formerly observed, Number is the Discerner of both the other Quantities, and most Discernible in it self, I shall heer begin with it; and thereby endeavor to Explicate the most Indiscernible Mysteries of Time and Extension: though I esteem no Quantity Mystical, or Cabalistical, in Virtue, or Signification; but only intend such Natural Mystery's therein as are Incomprehensible to us and our Reason.

E. III. The first Principle of Number is an Unit, which is Unity in it self, and Disunity from others; wherof all Number doth consist: but it is no Number in it self, being only an Imperfect Principle thereof: for all Number is Quantity Discrete, and such Discretion must necessarily be of more then One: Yet all other Numbers are only so many Ones, but One is most Intirely and Individually One in it self, having both the same Root and Square. And it is Analogous to an Instant, or Point, but Different from both, and each of them one from another. For an Unit may either severally Exist, as in one Instant; or Coexist, as in many Points, but an Instant can only Exist severally and Successively; for Past, Present, and Future, cannot be otherwise then several and Successive; and a Point can only Coexist, for it cannot be otherwise then in a Body which is Consistent. Also as all Number is only so many Ones, because it is Discrete;

so it is only so many several Ones Discreted one from another: Yet as it is so many Ones Discretely, so it may be also one Many Complexively, which yet is not Properly One, or a Unit; for that cannot be Divided or Discreted, nor hath any Halvs, Quarters, or other Fractions whatsoever, which are indeed so many Ones in themselves, wherof a Proper Unit is not capable, but any Number is only one Many Complexively, which is an Improper Unit, and Properly many Ones; and may therefore be so Divided and Discreted. So that indeed there is no Fraction or Surd in Number rightly consydered in itself, but only in Time, or Extension, or other things Numbred thereby: as Weight, Money, and the like; wherof if any can give the Intire Proportions, he hath also the Complete Number, resulting from the thing itself. Thus of all these three Concreated Surveiors of Nature, which we call Quantitys, Number is the most Perfect and Regular, and therefore Arithmetike is also most Perfect and Regular, wholly composed of Rules, and not, like Geometry, of Innumerable Problems and Propositions, which are only as several Accounts of so many particular Sums. And indeed it is so Regular and Complete, that I know not what may be added to it farther, except perhaps some more special Rules for greater facility and expedition, wherof I may heerafter occasionally give some other Instances, and shall now only mention for an Example the common Instance of the Changes of any Number used in Bells, Anagramms, or the like. Wherof there is this special Rule: Multiply the Product of the last Number Multiplied by the next Simple Number, As Once One is One; Two Ones are Two; Three Twos are Six; Four Sixes are Twenty fower; Five Twenty fowers are One Hundred and twenty; Six One Hundred and twentys are Seaven Hundred and twenty; and so Indefinitely: and such alway will be the Changes therof. The Reason wherof is very plain and evident; which is, that Six will make Six several Fives by Changing or setting aside one every time, and so consequently it contains the Six several Products of Five Multiplied as aforesaid; and so the rest one of another. Certainly Arithmetike is not only most Regular in it self; but also most Useful in other Arts: becaus Number is the Measure of all Finite things which God hath Created to be Measured thereby, even Time and Extension itself,

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(and so is Time of Extension, but not contrarily) and so there is great Use therof in Chronology and Geometry: and it is indeed the most excellent Mathematical Science, though we have generally appropriated the very Name of *Mathesis* to Geometry; because it doth more exercise Human Wit, which is better pleased with Curious Difficultys, then that which is more plain and facile, though no less true and evident.

V. The first Principle of Time or Duration is an Instant, which is only the very Present while it Actually is, and so excludes both Past and Future, which cannot possibly Exist together with it; and yet as it passeth away continually maketh a Succession of Instants, and that Succession is Time or Duration. But every Instant doth severally Exist in itself, and is not Successive, and consequently no Time or Duration; as an Unit is no Number: for Succession is of one after another, and therefore of more then One, but an Instant is only One. And so the Beginning or First Instant did necessarily Exist severally; for there was none before it, otherwise it should not have been the Beginning; and the Next Instant was after it, otherwise it should not have been the Next: and there is the same Reason of all the Instants which have been since, or ever shall be. Whereby we may Apprehend the Nature therof, though we can never Comprehend it, being swifter then any Thought which might Comprehend it. And because Instants are of so Minute a Nature, therefore they are not only Incomprehensible, but also Innumerable to us, and though in other respects Analogous to Units and Points, yet therefore not so Discernible as Units; and almost as Incomprehensible as Points, wherof I shall discours in the next Paragraph. And yet certainly there are such Instants severally Existing as well as Units, for all Time or Duration is composed of them, as well as Number of Units. And we may not deny any thing that Really is in Nature, and which we can Apprehend, though we cannot Comprehend it. And indeed we may deny Time and Duration itself as well as Instants, wherof it is apparently Composed, because it is only the Succession of severall Instants, which do and must necessarily Exist severally; and therefore not only Really are, but are Really several in themselves; because only the Present Instant now Actually is, as I have

have shewed, and yet what they are, or how Time or Duration is Composed of them, doth far exceed all Human Reason, and the utmost Comprehension therof.

VI. The first Principle of Extension is a Point; which is only an Indivisible Atom, and no Extension in itself; because Extension is of Part beyond Part, but an Indivisible hath no Parts, otherwise it should be Divisible into them. And because it is the Principle of Extension, which is Quantity Consistent, therefore it must also Consist, or Coexist, and cannot Exist severally. And so though it be Analogous to Units and Instants in other respects, yet by reason therof it is more Incomprehensible, not only then Units, but also then Instants; because Instants do Exist severally, and therefore may be truly Apprehended as several, and by themselves; but Points only Coexist, and therefore may not be truly Apprehended as several, or by themselves, but only as Consistent with others in Corporeal Extension, and so are wholly Indemonstrable. Nor is a Point the only Indemonstrable thing in Mathematical Science, but the very Cause and Ground of the Indemonstrability of all other *Asymmetra* or Incommensurabilities. And to Demonstrate this Indemonstrability I shall offer this Proposition, To reduce three square Inches (or any *Talia qualia*) to a Square, or indeed any others wherof there is no Square Root; which I suppose can never be Squared by any Division or Subdivision whatsoever. Yet I have a Rule whereby to reduce the Three Square Inches to a Square wanting only one Portion still less and less Indefinitely, which is this; First I consider the next Square to Three which is Four Inches, wherof Two is the Square Root; and then I place the three Inches Rectangularly, or in the form of a Rectangular *Gnomon*, so as to leave a Vacant Space which should be supplied by a Fourth Inch: and I consider the Proportion between this Vacant Space to be supplied, and the two Lateral Inches or Complements on each side of it from which I must borrow to supply it, which is as One to Two; and then to make a *Medium* between the Suppliers and Supplied I add Two more to those former Two, in all Four; and I multiply Four by Four, which make Sixteen: and accordingly I divide each of the two Lateral Inches or Complements into Sixteen Portions;



that is, **Fower Rows** of fower such Portions, in each **Lateral Inch**; and then borrow one of these fower Rows from each of them; that is, two Rows of fower such Portions, in all **Eight** such Portions, to supply the Vacant Space or *Gnomon*; whereby there will remain now **Three Rows**, and therof only three such Portions on either side of the **Lateral Lines** of the **Complements**, and each of the whole Rectangular *Latera* will be **One Inch** and **Three quarters** in length; according to which the Vacant Space or *Gnomon* now remaining is to be supplied; and therefore I Multiply **Three by Three**, which make **Nine** such Portions to be supplied, and I have only, as I said, **Eight** such Portions to supply them; and so there will now remain a Vacant Space or *Gnomon* of one such Portion, which, as I said, is the **Sixteenth** part of an Inch. Again, I confyder the Proportion between this second Vacant Space or *Gnomon*, which is now to be supplied, and both the two upper **Lateral Rows** or **Complements** therof, from which I must borrow to supply it, wherof each doth now contein **Six** such Portions; that is, **Fower** which were in it before, and **Two** added to it, in supplying the first Vacant Space or *Gnomon*, and wherof the second Vacant Space or *Gnomon* was to be the third: so now I have **Six and Six** such Portions, in all **Twelv**; to which, as before, I add **Two**, in all **Fourteen**; and I Multiply **Fourteen by Fourteen**, which make one hundred ninety six; and so I divide each of these last Portions into one hundred ninety six less Portions; that is, **Fourteen Rows** of fourteen such less Portions of each of the former greater Portions; and then I borrow one whole Row therof from each side; that is, **Six and Six**, in all **Twelv fourteen** such Portions, which make one hundred sixty eight, to supply this second Vacant Space or *Gnomon*, wherof there will now remain **Thirteen** such less Portions on either side of the **Lateral Lines** of the **Complements**; and each of the whole Rectangular *Latera* will be **One Inch** and **three quarters**, wanting a fourteenth part of a quarter in length, according to which this second Vacant Space or *Gnomon* is now to be supplied: and therefore I Multiply **Thirteen by Thirteen**, which make one hundred sixty nine such less Portions; and I have only, as I said, one hundred sixty eight such Portions to supply it. And so there will now remain a third Vacant Space or *Gnomon* of one such less Portion, which, as I have said, is the one hundred  
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ninety sixth part of of a sixteenth part of an Inch, that is the three thousand one hundred thirty sixth part of an Inch, wherof the Square Root is Fifty six, which is fourteen fowers; wheras the Square Root before was only one fower; which is a very great Decrease of the Vacant Space or *Gnomon*. And according to this Rule the Vacant Space shall still decrease Proportionably, *Toties Quoties*, and yet a less Vacant Space still remain, and the Square never be Completed. And this Rule is grounded upon another special Rule in Arithmetike; which is, That if of any three Successive Numbers the greatest be Multiplied by the least, it will produce one less then the Middle Number Multiplied by itself. And heer it is made such by adding alway Two to the Complements according to this Rule. As before in these Examples, Fower Multiplied by Two made Eight, which was one less then Three Multiplied by Three, which made Nine. And so again Fourteen Multiplied by Twelve made one hundred sixty eight, which was one less then Thirteen Multiplied by Thirteen, which made one hundred sixty nine. And because some may suppose that though such Squares can never be Completed by this Rule, yet it may possibly be done some other way, (which I am confident cannot be, and that none by any other can come neerer to it then by this Rule) yet for their farther satisfaction heerin I shall offer them several other confessed *Asymmetra*. As the Proportion between any Diagonal Line and the Lateral Line of the same Square. And I have another Rule whereby also such an Asymmetry may be reduced to one Portion still less and less Indefinitely, and yet shall never be Completed: which is this, First I consider of what other Square the Diagonal Line of the Square given would be a Lateral Line. As for example; if the Square given be Fower Inches, wherof the Square Root is Two, I add that which is the only Square Root before it, and that is One; and then I say, One and Two make Three, which Square Root Three being Squared makes Nine Inches, and Nine is doubly as much as Fower, more One. Now I know that the Lateral Line of a Square which contains doubly as many Inches as the Square given is the Diagonal Line of the Square given. And so I say, the Diagonal Line of the Square of fower Inches which was the Square given is Three Inches in length, Disquaring one from the Square of Nine Inches. Again I add together both the Num-



bers of each of the former Square Roots which were Two and Three in all Five, which must be the next Square Root according to this Rule: and then let the Square thereof be given which is Twenty five. Now to find the Diagonal Line thereof I again add to Five the first Square Root of the first Square given, which was Two, in all Seven; which Square Root being Squared makes Forty nine; and Forty nine is doubly as much as Twenty five, less one. And so of Five and Seven, which make Twelv; and Five and Twelv which make Seaventeen, and the rest according to the aforesaid Rule Indefinitely; wherof the Disproportion will be Interchangably One more, and One less. And the Reason of this Rule is, that wheras the Diagonal Line of any Square alway makes a Lateral Line of another Square conteining doubly as much as the former, there is no such Square Root wherof the Square doth contain doubly as much of the Square of any other Square Root whatsoever. And so the Proportion between any Line of an Equilateral Triangle and the Perpendicular Line thereof will ever be Asymmetrous, becaus there is no Square Root of three Fourths of any Square, which is the Proportion between them. But the most known and common Instance of this kind is the Quadrature of the Circle, which though as the rest may still be reduced to a Proportion less and less Indefinitely, yet can never be Completed: *Certe nescio quid semper abest rei.* Now it is most evident that though these Proportions can never be thus Completed Mathematically, yet they are all Physically Complete in themselves, as well as any others. And particularly that there is a Complete and Perfect Proportion between any Circle and such a Square wherof the *Diameter* of the Circle is the Lateral Line, that is of the Square Excribed; for apparently there is a certain Proportion between the *Perimeter* and *Diameter* of the Circle, and so consequently between the Circle and such a Diametrical Square, as I may so call it; becaus the *Diameter* of the Circle is the Lateral Line thereof. Which Proportion though it can never be known nor expressed in Rational Number, yet we know according to common Rule, That if you Multiply half the *Perimeter* by half the *Diameter* of the same Circle, that is, if you suppose a Rectangular Parallogramm so made that the Length shall be equal to half the *Perimeter* of the Circle, and the Breadth equal to half the *Diameter* of the same Circle,

Circle, the Product or Rectangle so made will be equal to such a Circle: and so if you Multiply a quarter of the *Perimeter* by the whole *Diameter*, or a quarter of the *Diameter* by the whole *Perimeter*, which are tantamount. And thus you may measure the Arch Quadrant, or Semiquadrant, or more or less part of the Circle, as well as any Triangle; for so you measure only within the Angles, and to the Angles, and therefore the Angles which make the Excrecential *Superficies* beyond the Circularity can make no difference in the one more then in the other. And from all these considerations of a Circle I find the Regular Proportion or Analogy between any Circle and the Square thereof Excribed to be this; That as the *Perimeter* of the Circle is in Proportion to the *Perimeter* of the Square, so are the Square Inches of the Circle in Proportion to the Square Inches of the Square. Now that all this very large and tedious Discours may not seem Impertinent, I shall make that Improvement thereof which I intended; and from it draw these Consequents. First that Mathematically, or according to our Mathematical Science, Extension is and must necessarily be supposed to be Divisible into alway Divisibles; because by such Mathematical Rules, as before, I can Divide and Subdivide it Indefinitely. Next that Physically, and in its own Nature, Extension is not, nor cannot be possibly Divided into alway Divisibles; Because, if there could be any such Physical Division and Subdivision thereof Perpetually, then such Proportions should never be Physically Completed. Lastly, that since there is Actually such a Physical Completion, which, as I have shewed, can never be effected by Divisibles or any Extended Parts of Extension, therefore it must necessarily be by somewhat not Divisible, but Indivisible and not Extended in itself. And heer I suppose we may a while make a Stand, and gaze with Admiration and Amazement at these wonderful Mysterys, which have hitherto puzzled, and will still puzzle the greatest Wits of the World: neither shall I presume to absolv them; but only offer what seemeth to me most probable. Certainly, *Vero nihil verius*; for all Verity is one and the same in itself, and with itself, and cannot Contradict itself. Wherefore that which is Mathematically true cannot be Physically fals; and that which is Physically true cannot be Mathematically fals; but one or other of these ways of Demonstration must be fallacious.

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And for mine own part I shall rather believ Nature, which is the Art and Institution of God, then any Mathematical Art or Institution of Mankind. And I must suspect our own Mathematical Art to be fallacious heerin, and the fallacy to ly in this; that becaus we can easily discern Extension which is Divisible, but cannot discern Indivisible Points, we indifferently apply our Mathematical Rules of Division and Subdivision both to Divisible Extension and also to Indivisible Points, not knowing where to stop, nor being able to discern between them; and so go on Perpetually according to such Mathematical Supposition, though there be no such Perpetual Process in Nature. Which is as if we should so proceed beyond an Unit, and divide it into Halvs, Quarters, and the like. Or as if becaus I can Divide sower Angels into two Twos, and again Subdivide each Two into two Ones, which I may truly do; I should also therefore proceed to Divide each one Angel into Halvs, and Quarters, and the like Perpetually, which I may not likewise do; becaus each Angel is Indivisible in himself, and in his own Nature, and hath no such Halvs; or Quarters; and yet Arithmetically I might so go on to Divide and Number, if I did not know the Angelical Nature to be Indivisible. And though we know a Point to be Indivisible, yet becaus it is so Indiscernible that we know not where to find it out, we go on still so to Divide and Subdivide perpetually according to our Mathematical Rules. And thus though it may be maintained by way of Argument that *Quantitas est Divisibilis in semper Divisibilia*, yet it is Invincibly confuted by a contrary Argument drawn from that very Perpetual Divisibility of the Quantity, that is, the Impossibility therof; and on this I chiefly insist; For if there were any such Possibility of Perpetual Division therof Physically and in Nature, though I easily grant it might never be actually Future (as many Possibles shall never be Actually in any future Time) yet I can never admit that there can be any Possibility of that which yet cannot Possibly be Actual, which they must affirm who hold the Contrary Position; and so indeed they very freely acknowledg, that it is so alway Potentially or Possibly, but can never Actually. But as Futurity of that which never Actually shall be, is a plain Contradiction; so Possibility of that which never Actually can be, is equally Contradictory: for as Future, or Shall be, and Shall not be; so Possible,

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or Can be, and Can not be, are Contradictory Terms. And all Possibility is the Possibility of being Actually, and not of being Possibly or Possibility of Possibility, which is Childish and Nugatory, and only a Reduplication in Terms of the same Thing in itself. Nor is it only Contradictory in Terms, but also in the Thing itself: For we do not now discours of Quantity Successive, wherein there may be a Perpetual Possibility of Succeeding Futurity; but of Quantity Consistent, wherof all the Divisible Parts, and Indivisible Points, do and must necessarily Consist and Coexist Actually together in the same Present Instant, and not in several Future and Successive Instants. Nor do we now discours Mechanically, or of any such Mechanical Division of a Body into less Wholes, or of the Possibility of such Actual Separation of the Parts from the Whole Locally, but of the Actual Extension of Part beyond Part, according to the Nature of Corporeal Quantity as it is in itself, and the Mathematical Division of the Parts in the Whole Extensively: And so whatsoever, or howsoever many the Parts of that Extension given be, they are already and in the Present Instant Actually what and so many as they are, and cannot be greater or more then they are. And I suppose no Mathematician doth contemplate the Local Divisibility, which is Possible, but only the Extensive Division of the Parts, which is Actual in the Whole; wherein only they are such Mathematical Parts; whereas being Locally Divided from the Whole they become less Wholes in themselves. And so such Possibility is not at all to be regarded in this present Discours, but only the Actuality whatsoever it is; and then the Position thus rightly explained doth amount to this, That the Extensive Parts Actually in the Whole are Actually Innumerable, not only to us, or by any our Mathematical Division or Subdivision, which I have already granted; but also Physically, and in their own Nature, which is Impossible. For then the least Extensive Whole should be equal to the greatest; because both have equally Innumerable Parts in themselves; for Innumerable can neither be more nor less then Innumerable. Nor will it be evaded by saying that the greater Whole hath Innumerable greater Parts, and the less Innumerable less Parts; for Innumerable Parts, though never so small will suffice to make any Whole whatsoever, though



never so great; becaus Innumerable is Innumerable; and doth not only afford whatsoever may be wanting, but can never be spent or exhausted. And becaus every least Part hath some Extension, and Measure therof; therefore the Whole of such Innumerable Parts must also be Immenfurable which (as *Archimedes* hath demonstrated in his *Psammites*) is both Rationally Impossible, and Mathematically Fals. But whatsoever Notion Mathematicians may have of such Divisibility into less and less Parts Perpetually, yet certainly none can deny the gross Whole of any Corporeal Extension given (whatsoever the Extent therof may be) to be Mensurable, and Finite; otherwise it could not be given, nor indeed Actually be, as I have formerly Demonstrated. And I am very secure of that Argument and of the clearnes and firmnes therof; however men may determin concerning this other Question, which I have also prosecuted for a farther Discovery of Truth. And I must heer observe that not only Extension, but also Time, and Number, and whatsoever hath Parts; yea all Qualitys, and whatsoever hath Degrees; and all that is in any kind susceptible of More and Less, may as well be affirmed to be thus Divisible into alway Divisibles. And so wheras Physicians make severall Degrees of the fower first Qualitys, and Musicians of Musical Notes, and the Like, I can again Divide and Subdivide them Indefinitely aswell as Extension; and Demonstrate that there are the like Imperceptible Minims therin. And heer again we may stand and admire the Divine Wisdom and Goodnes, which hath so Plainly manifested unto us those Wholes, and greater Portions of Wholes, that are of any Use and Concernment, and without which Scales, Dials, and all Mathematical Instruments, and all Medicinal Compositions, and *Gamuts*, and the like; and all Symmetry, Temperature, and Harmony, had been unknown and unserviceable to Mankind: and also accuse the Vanity of our own Human Witt, which doth so Ambitiously affect to know and Curiously to pry into those very Minute things, whose Usefulness is as little as their Proportion; and which God, to humble our Mathematical Pride, hath purposely concealed from us; and yet because they are so Indiscernible, therefore we more affect to Discerne them. For mine own part, as I am satisfied in knowing that there is a Circumference of the whole

whole Globe of the World, though I know not how large it may be; so also in knowing that there are such Physical Points, though I know not their Minute and most Exile Nature. Yet I do also conceive that as Extension is Terminated by Points, so the Divisibility thereof doth Terminate in Points, and that there are such Physical Points as well as Physical Instants, and Physical Instants as well as Physical Units, though they be not equally Discernible by us (and that Points are Points, and not only Notes, or Nothings, as some do affirm) And there is no Objection against the one, which may not also be armed and intended against the other, by such Dividing and Subdividing Perpetually, even beyond Points, Instants, and Units themselves, into Halves, Quarters, and the like. And such indeed is the common Objection, Of how many Points is the least Corpuscle composed? It may be as well demanded. Of how many Instants is the least Minute of Time composed? which none can tell; though we can easily tell of how many Units, Two, which is the least Number, is composed. And I demand of such Curious Objectors, Of how many Extensive Parts or Portions the least Corpuscle is composed? which themselves affirm to be Innumerable; though I deny it of Parts, and dare not affirm it of Points; because it is Impossible: but only assert, that neither they can know of how many Parts, nor I of how many Points any Corpuscle is composed. And this I suppose to be a sufficient Answer to such a Question (for such it is rather than an Objection) But for farther satisfaction, I shall consider a least Corpuscle, which must be Globular as well as the great Body of the whole World; (because all Angles are Protuberant and render the *Superficies* unnecessarily greater) and yet no Mathematician ever did, or ever can, assigne the whole Proportion in fact and consequently not all the particular Portions of any Globe or Circle. Also every Corpuscle, though never so little, yet is a Body, having Longitude, Latitude, and Profundity; in all which the Points must Consist and Coexist, and they also in the whole Body, otherwise it should not be a Body: whereas though we know that a Body is composed of Longitude, Latitude, and Profundity, yet we know not of how many Long, Late, or Profund Lines, it is composed; because though they Really are, and are Really different



ferent in Nature, yet they so Corporeally Consist and Coexist that they can not be Locally separated, but only in and with the Corpuscles or Body. And so though Points Really are, and are Really Different in Nature, yet they also so Corporeally Consist and Coexist, that they can not be Locally Separated, but only in and with the Corpuscles or Bodys: and so though Mathematically we may consider them in their several Natures, yet we may not therefore consider them in separate Existences. Whereas generally all the Objections are drawn from the Supposition of Points Separate, or at least of Points Coexisting only in Longitude, and the like, (which are only Imperfect Principles of Extension, as well as Points.) But I have shewed that Entitys may Really Differ, though they are not Locally Separate, or Separable: and if they grant me Points so Coexisting, not only in Longitude, but also in Latitude and Profundity, and the whole Corporeity of a Corpuscle or Body (as they must, because they do so Really Coexist, and can not otherwise Exist in Nature) I can by that one Concession solve all their Objections, which otherwise may seem as Unanswerable, as Points are Incomprehensible; being grounded upon the very Incomprehensible Nature thereof. And if they will not grant me that which is Physically and Really true in itself, but argue upon false or feigned Suppositions, I shall not much care to Answer them; otherwise then I should him who would argue upon a Supposition of Coexisting Instants, Past, Present, and Future; by telling him plainly, that there is no such thing in Nature: and yet there are Physical Instants Existing severally; and so, though there is not any single Point in Nature Existing severally, yet there are Points Coexisting in a Body. And I suppose that from this Fundamental Fallacy all the Fallacy of their Objections doth arise. But he who will rightly Philosophise, or Theologise, must be very careful that in the Contemplation of such things as are Incomprehensible, or Infinite, though he may frame Comprehensive or Finite Notions thereof as Scaffolds whereby to build, yet he may not build upon them; but must again take them down, and reduce all such Subsidiary Notions or Suppositions to the very Nature of the thing it self, which is Incomprehensible, or Infinite.

VII. Thus though there be Really in Nature Points, Lines, and *Superficies*, yet the Supposition of any such several Existence therof, as we may Mathematically feigne and frame to our selves (and as some have supposed the whole-Body of the World to have been made by the Casual Concurrence of such Atoms or Points) is only Notional in our Reason and Mind, and not Real or in the Nature of Extension itself, wherof the least Minim is more then one single Point, yea it contains in it Points Innumerable to us. And as there is no such several Point, so also no several Line in Nature: for the least Hair of the least Mite hath not only Longitude, but also Latitude; because it hath several Sides; and one Side therof is not the other, nor all one and the same with the Longitude. And so there is no several *Superficies* in Nature, having both Longitude and Latitude without any Profundity; for the thinnest Plate of *Muscovy* Glass hath a double *Superficies* above, and beneath, and also others in the very Edges therof. Wherefore not only Points, but also Longitude, Latitude, and Profundity do necessarily Consist and Coexist together; and all these make a Complete Extension or Consistence of any Body. Now every Body, because it hath Longitude Latitude and Profundity, must have some Figure which is the particular Shape or Module of the Extension therof, Resulting from, and Subsisting in that Extension (as a particular Property therof) Immediately, and Mediatey in and by it in the Substantial Matter. Yet Figure Really Differs from Extension; because there may be several Figures of the Same Extension of the Matter which (as Statuaries say of their *Materia*, Wood, Stone, Wax, and the like) is capable of all Figures, Faces, or Forms whatsoever. The first and most simple Figure, and which indeed is most Proper to the Matter, is a Globe. And therefore this is the Universal Figure, and all other Particular Figures, as I have said, are only the Protuberances and Enormities therof, though never so Symmetrical and Conformable in themselves. And the Globular Figure is such, because it is most Intire and Uniting, wherof all others are only some unnecessary Excesses, or Defects; and therefore also it is most Capacious; as may plainly appear by varying the *Perimeter* of any Circle (which hath nothing Excrescential or Excessive



in itself) from the Circular Regularity thereof, into any Angular Figure whatsoever, for so if you Inflect it into an Isoperimetrical Equilateral Triangle, the *Area* thereof will be less then that of the Circle, as Six to almost Ten: and if you Inflect it into an Isoperimetrical Square (as Carpenters do in measuring Timber) it will be as Eleaven to almost Fourteen (which is their Girt Measure, and the true gain and advantage thereof more then of such a Square.) And so Proportionably if you Inflect it into any other Equilateral Polygon, though I doubt all will be found Incommensurable as well as the former. But yet I observ a Proportion or Analogy between the Circle and such a Square made of the *Perimeter* thereof, or, as I may so call it, the Isoperimetrical Square thereof, and the Square Excribed, which I have before termed the Diametrical Square thereof; that is, As the *Area* of the Isoperimetrical Square of the Circle is, as I have said, in Proportion to the *Area* of the Circle as Eleaven to almost Fourteen, so the *Area* of the Circle is in Proportion to the *Area* of the Diametrical Square thereof, as almost Eleaven to Fourteen. And though I conceiv that every Regular Figure is Perfect in its own kind, and none other so Perfect as it, in that Respect, and therefore Asymmetrous; yet I also conceiv that the Asymmetry or Disproportion between a Circle and a Square is rather from the Square, which is more Imperfect Comparatively, then from the Circle, which is Absolutely the most Perfect Figure in itself: and though we commonly, as Carpenters, and other Mechanical Measurers, do rather Measure by the Square and Cube, then by the Circle and Globe, yet God and Nature work by them most Perfectly and Exactly; and so have made the Wor'd to be of the most Perfect Figure, which is Globular or Circular in the whole *Superficies* thereof, not by Molding, Carving, or Casting, or any such Mechanical or Violent Formation thereof, but by Natural Principles Created in itself. For the whole Body thereof being one Homogeneous and common Matter doth Naturally Incline and Adhere to itself, having nothing Corporeal besides itself to which it may otherwise Incline or Adhere, or which may hinder or divert it from Uniting or flowing together into one most Intire Body in it self; which, as I have said, must be Globular, because a Body can not possibly be in a less Space or more United then in a Globe.

Globe. And this Union doth best preserv and fortify its own Internal Entity in itself, and so against External Nonentity. Wherefore also all Material Spirits, which are Heterogeneous Substances, do thus Unite and fortify their own Specificall Natures against Ambient Heterogeneous Enemies, by casting themselves, and thereby their Bodys, which they Consubstantiate and Act, into particular Globules as much as they can; which may appear by Bubbles in Water, Sparks of Steel, Shot of Lead melted, Mercurial Globules, and many such Instances. And if the Universal Body of the World be a Globe (as all men generally suppose, and therefore call it *Orbis*, or the Globe) then also probably it is a most Perfect and Exact Globe; and not like the Teraqueous Globe, which by the Consistence of the Earth and Heterogeneity of Earth and Water is full of Hills and Vales, Shores and Seas: but as if the Water did again cover all the Earth, and there were no Agitation therof (as it was in the *Chaos*, as I have shewed) it would certainly be a most smooth *Aënor*, having a Perfectly Spherical *Superficies* of its own Body, becaus it is Fluid; so much more we ought to conceiv that the Superather, which is Highest, and therefore most Rare, and probably most Fluid, is most Perfectly Spherical, and also becaus it must Unite together, as I shall shew heerafter. And if there be such an Exact Circumference of the Utmost Body of the World, then there must also be as Exact a Center corresponding to that Circumference, which must be a Physical Point; for as the Physical Circumference must be in every Part therof Utmost, so the Center must be answerably Inmost, and therefore must be a single Point, not Extended, nor having any Part beyond Part, because any two cannot be Inmost or Midst; for that must be something that is One, whatsoever it is: and I do not intend by this Physical Point any such least Corpuscle, as is commonly supposed, for that also hath Part beyond Part, but a very Point as it is in Nature, not Existing severally, and according to Mathematical consyderation therof, but Coexisting in a Body Physicaly, as I have before declared: and such a Point is also the *Copula* of all Consistent and Coexistent Extension, and doth Terminate both the Utmost *Superficies*, and this Inmost Center. And as it doth thus Terminate Extension, so also Motion of Bodys; so that Naturaly they Move not above the

Utmost.



Utmost Circumference, or below the Inmost Center, as I shall shew heerafter. Now a Globe, as it is the Figure of the least Corpuscle, so it is Potentially contained in every other Figure, and as it is the Figure of the great Body of the World, doth contain in it Actually all other Figures; Which like Extension, from which they flow, are not only Points, nor Lines, which have many Points, nor any Superficies having many Lines (as a Picture which hath only several Symmetrical Lineaments) but the Complete Longitude, Latitude, and Profundity of Bodys; without which there can not be the Figure of any Body which must be Long, Late, and Profund.

VIII. Pores are only Superficial Concavitys in the Figure of any Body: wherefore there must be a Body, otherwise there cannot be any Concavitys therof; and there must be some Concavitys, otherwise there should be no Pores. But whether there be any other Body to fill these Concavitys, or not; yet the Body itself which is Porous is a Body, as well as the Body of the whole World is a Body, having a Superficial Convexity of itself, though there be none other Body without it. Or if it be filled with another Body, then that also which fills it is a Body, and is not the same Body, nor Spiritually Homogeneous with it. Wherefore there were no Pores in the first Created Matter before the Intermission of Heterogeneous Elements; for if the Body filling were Homogeneous with the Body that is filled, then both should be Continuous, and one Intire Body without any Such Concavitys, and consequently without any Pores. As if an empty Honeycomb were all filled with Bees Wax, it should no longer be a Comb, but an Intire Mass or Cake of Wax. Also though Pores be Partial Discontinuitys of the Body Porous, yet it must be partly Continuous; for if the Honeycomb be cut into little pieces, and they laid asunder, the Spaces between them all are not Properly Pores of one Body, but Intervals between several less Bodys; and so also the Interstices of a Sive, or Silk, or the like, are no Pores, becaus the Parts or Threads therof are only Contiguous, and not Continuous. And the Porous Body must be Consistent, having such *Vascula* in the Concavitys therof as may contain the Body that fills them, which must be Fluid: As if an Honeycomb be filled

filled with Air it is Porous, but if it were filled with Tallow, or any thing equally Consistent, it should not Properly be said to be Porous, more then any Inameld Work, or the like: much less are Fluid Bodys said to be Porous, though they have many Consistent Corpuscles in them; as Muddy Water, and the like. And though the Porous Body be generally more Dens, becaus it must be Consistent; yet it sufficeth that it be Consistent, though it be more Rare; as an Honycomb filled with *Mercury*. And this I suppose is that which is intended by Porosity, and which I have more largely explained, becaus there is so much discours therof among Philosophers, especially such who when they can give no better account of Nature, resort to Pores as their *Latibula* and Subterfuges: wheras, as I have said, Porosity is nothing but only particular Superficial Figure, or Concavity of the Body; whether the Pores be greater or less, *Vasa* or *Vascula*; as Cells of an Honycomb, or the least Holes in the Wax; and they do not in the least alter the Nature of the Porous Body consydered in itself: as Wax is not altered in its own Nature by being Molded into any Shape or *Effigies* whatsoever. And indeed unless we admit a Vacuity there are no Pores in Matter consydered in itself; becaus if they be filled with any other Body, whatsoever that Body is, yet being also Matter there is an Intire Continuity of both, which are one Homogeneous Body of Matter in itself. As the Terraqueous Globe is one Intire Globe, though it be partly Earth and partly Water, which are several Bodys as they are Earth and Water, but only one Body as they are Matter: for all Discontinuity, and consequently all Porosity, is from Heterogeneity; which is not of the Matter (for that is one common Substance) but from the several Spirits. And I suppose that all Fluid Bodys are also Imporous, becaus their Parts may flow together: and so some more Consistent Bodys may also be Imporous; as Glass, Gemms, Marble, and the like.

IX. I shall next consyder Density and Rarity: which, as I have said, do Immediately flow from, and Subsist in the Substance of the Matter, and not Mediatly in and by Extension, like Figure, or Porosity: for the Matter itself may be more Dens, or more Rare, though the Extension be the same; not only in Extent, but also in the



very Figure, and Porosity, as I shall shew hereafter. But as all Different Extension is only More, or Less, which are the Degrees thereof; so is Density also More, or Less, because all Matter hath some Density, as well as Extension: and More doth Comparatively Denominate a Body Dens, and Less Rare; which yet are only Degrees of the same Positive Density; which plainly is an Affection of the Matter, and so Density, Rarity, Gravity, and Levity no Qualities of Forms or Spirits, as hath been supposed. Wherefore as Matter is only Comparatively more or less Dens, so all Matter is in itself either more or less Dens within the same Extension; otherwise there should be no such Difference of the Density or Rarity thereof: for Porosity (which some as I have said make to be a Subterfuge and Evasion heereof) is altogether Impertinent to Density or Rarity, because the Question is not concerning any Complex Density or Rarity of Several Bodys joined together in one Complex Body; that is, both the Body Porous, and the Body filling the Pores; but of either of them singly and simply considered in itself: and certainly either of them hath Matter, and all Matter, as I have said, hath some Density, otherwise it should not be Matter; and the only Question is, whether there be any such Matter which is Comparatively more Dens or more Rare than any other Matter simply in itself? And whereas generally Porous Bodys that are filled are more Dens, and Bodys which fill the Pores more Rare, as I have shewed, it plainly appears by Porosity itself, whereby they seek to solv Density and Rarity, that they also are such in their several Simple Bodys so considered in themselves: otherwise because a Brass or Iron Kettle set upright with the Concavity thereof above the Water will swim in Water (the Complex Extension both of the Vessel and of the Air, which fills that one great Pore of the Cavity, being in the whole more Rare, and consequently more Light, then the same Proportionable Extension of Water) we might therefore affirm that the Brass or Iron in itself is not more Dens, and consequently more Heavy then the Water, nor the Air more Rare, and consequently more Light then the Brass or Iron; nor any of them more Dens, or more Rare, and consequently not more Heavy, or more Light, then another, simply considered in themselves: which if they be, as certainly they are, then there is also such Density and Rarity both of the Matter

Matter of any Porous Body, and of that which fills the Pores, simply considered in themselves. And indeed if we should consider Density and Rarity only Complexively and not Simply, there should be no Density and Rarity in the World (which would take away the very Subject of the Question) for the whole World being one Complex Body, though it consist of many particular Bodys, more Dens, and more Rare Simply in themselves, yet is all Equidens Complexively; because it is all one Complex Body. Wherefore either there is no Density or Rarity in the World; or if there be, the difference thereof must be in the different Simple Bodys, and particular Matter itself. Also to inquire farther into this Porosity, which is assigned to be the Formal Cause of Rarity; we will again consider the Reason thereof: which must be this, that a more Porous Body is therefore more Rare because the Pores are filled with more Rare Matter, unless we please to admit a Vacuity therein (which is another Subterfuge of this Question) but now we will consider it as filled with some other Matter; which if it be Equidens, will make the whole Complex Body Equidens; and therefore necessarily must be more Rare, to make the Porous Body more Rare: and then I demand, Why is that Matter more Rare which so fills it? and according to the same Reason it must likewise be, because that Matter is a Body more Porous and the Pores thereof filled with another matter more Rare, then itself, and so Infinitely; which is both Irrational, and Impossible: for suppose the Pores of any Terreous Body to be filled with Water, and any Pores of that with Air, and any Pores of that with Æther, and any Pores of that with Superæthereous Matter; yet we must at last stop somewhere, and confess, either that the last Matter is more Rare in itself, which will destroy the Reason assigned, or otherwise, that the Pores thereof are not filled, but that the last Porous Body hath only Interspersed Vacuities. And so indeed whosoever doth deny Density and Rarity of the Matter in itself, if he be true to his own Reason, must hold an Absolute *Vacuum* in Nature; whereof I shall discourse hereafter, not esteeming this sufficient occasion, nor any present Discourse thereof pertinent to the Question; which is, as I have said, concerning the Density or Rarity of the Matter in itself, whether Porous, or not Porous, or whether the Pores thereof be filled, or not filled. Now if there be such a different Density and Rarity of the Matter itself,



then there may be Condensation and Rarefaction of the Matter itself. And becaus this is the greater Question, and doth also contain the other, I shall solemnly argue it according to my maner. Certainly there is no such fixed Standard of Density in the Matter itself, and in the Nature therof, that it could not Possibly be more or less Dens, or that God could not have Created the Matter more or less Dens, becaus there is no Contradiction in it; for it should be Matter; whether more less Dens; and if God might as he pleased have Created the whole Matter more or less Dens, then he could also Create one part of the Matter more Dens, and another less Dens: and so indeed he hath; for he Created both Heaven and Earth; wherof the Heaven and Heavenly Bodys are less Dens, and more Rare; and the Earth and Earthly Bodys more Dens and less Rare. And if he could Create one Body more Dens, and another more Rare, then he can also caus the Dens Body to become more Rare, or the Rare to become more Dens: and so also he hath; for he made the Water which is more Dens to Ascend in Vapors, which are more Rare; otherwise they could not so Ascend into the Air: and again the Vapors which are more Rare, to Descend in Mists and Rains, which are more Dens, otherwise they could not so Descend through the Air. Also I prove it by the Products of Density and Rarity, which are Gravity and Levity, and their very Motions of Descent and Ascent, according to the Hydrostatical Rule of *Archimedes*, and all others since him, That more Matter of less Extension will sink through less Matter of more Extension if it be Fluid. And this is the very Formality of Density that it is the Affection of more Matter being of less Extension; and of Rarity, that it is of less Matter being of more Extension. And if there be Density and Rarity, then also Condensation and Rarefaction of Bodys: as I have shewed; and which may be confirmed by many Sensible Experiments, wherof I shall mention only two, one of Condensation, and the other of Rarefaction. The first is the Impregnating of Common Water with Salt. Take a Glass Wine-bottle, and first put into it as much Salt as the Water may Imbibe, and then fill it up with Water, and stop it with a Cork, so as no Water may come forth; and being so stop'd stir it up and down by moving the Glass-Bottle until the Water be perfectly

feetly Impregnated with the Salt, and so made Brine; and when you let it rest again, you shall find that the Brine, which now contains both the Water & the Salt, will not fill the Bottle as before, but Subside in the Neck almost to the Belly: which doth plainly shew a Considerable Condensation, or the same Matter of less Extension then it was before. The other shall be the common Instance of Gunpowder fired in a Gun loaded with a Bullet; which will be violently discharged by the sudden and great Rarefaction of so small a Body of Powder into so large a Body of Flame, or the same Matter of more Extension then it was before, which therefore requireth a larger Place according to the enlarged Extension therof, and explodeth the Bullet, or breaketh the Gun, to attain it; though the Flame be a very Fluid and Corporealy Infirmit Body, and hath little or no Consistence in itself; and therefore also hath little or no Porosity in it self; and if it were Porous, would rather close the Pores thereof, or return again into them by such a strong Compression, then exclude such a Solid Body as the Bullet, or break the Gun. Nor is it from any Spiritual or Active Power of the Fire, which sometimes doth not fire all the Powder; and a Windgun by Compression of Air, without any Fire, doth the like Execution. Much less is it from any Imaginary Æthereous Matter penetrating the Gun; for unless We also fancy some Imaginary Valves, that Æthereous Matter would be far more easily forced back again, then extrude the Bullet, or sooner break the Gun in the Entry therof then in the Retreat. Also Glass suddenly Heated breaks by the sudden Expansion; and so cooled, by the Contraction. By these, and many like Experiments, it plainly appears that there is such Condensation and Rarefaction of Matter itself, as I have before described; which yet some obstinately deny, and either will not or cannot understand it through a preconceived Error that Matter and Extension are one and the same thing; which if it were true, I confess it impossible, that there should be any such Condensation or Rarefaction of the same Matter in itself; for then the Extension also must be the same, and consequently there could be no such Condensation or Rarefaction, which are Variations of the Extension of the same Matter: otherwise the Extension therof should be the same and not the same, which is Contradictory. Wherefore such Condensation and Rarefaction do plainly prove it Im-



possible that Matter and Extension should be one and the same thing. But, as I have before shewed, so heerby it most evidently appeareth, that Matter is a Substance, and Extension an Accident. And though no Matter can be without some Actual Extension, yet that being an Accident Subsisting in the Matter, there is a Potentiality therof to be sometimes Actually more, and sometimes Actually less, the Matter remaining the same. Nor is there any Penetration of several Extensions, but only the Extension is thereby Varied, whether it be Enlarged, or Contracted. And so I do not affirm that there can be two Extensions of one Individual Body when the same Matter is Contracted into itself by Condensation, nor yet two several Bodys having only one Extension when it is Enlarged in itself by Rarefaction. Nor yet do I conceive that though there be such a Potentiality of more or less Extension in the same Matter that it is Boundless, or that therefore it can be Always Extended more or less, Infinitely (for More or Less as I have said is Finite, and can never be made Infinite) but as in all other things, so in this God hath set certain Natural Bounds and Limits, unknown to us, which Extension itself cannot transgress. And I shall heer farther observe, that these Variations of Extension are either Condensation and Rarefaction by Natural Generation, which do continue; becaus they are so caused by the Spirit Superinducing them in the Matter, and so continuing them; as in the Accension of Gunpowder, and the like: or Compression and Dilatation by Violent forcing of the requisite Body of Matter and Spirit itself, which therefore do not continue longer then the force lasteth, that so containeth the Matter in that Extension; as in the Windgun, and the like: and that which we call Elasticity of the Air, wherof I shall discourse heerafter, is only a Motion or *Reflexus* to Restitution from such Violent Compression or Dilatation: and such Motion may be not only of the Figure, as in bending a Bow, or the like; but of the Extension itself, as in the former Experiments. And so there may be a Violent Compression or Dilatation of the Extension of a Body according to the Particular Nature therof, which yet may be a Natural Condensation or Rarefaction according to Universal Nature, as when Air doth Expand itself *Ne desur Vacuum*, as I shall shew heerafter, and when it can Expand itself no farther, it will

will also there stop and not break asunder, *Ne detur Vacuu*.

X. Gravity and Levity are, as I have said, the Products of Density and Rarity, in which they Immediately Subsist, and Mediate in the Matter; as Figure doth in Extension, and by it in the Matter. Wherefore also, as Rarity is only a less Degree of Density, so is Levity of Gravity; and all Matter whether more or less Dens, yet becaus it hath necessarily some Density, it hath also some Gravity Proportionable therunto. Thus it is said, that there is *The Weight for the Wind* or Air as well as the Water, and not only Air, but also Æthereal and Superæthereal Matter hath Weight in itself either Actually or Potentialy; for if more Matter Weigh more, becaus it is more Matter, and less Matter Weigh less, becaus it is less Matter, then all Matter must Weigh, becaus it is Matter: And thus *Pondus* is of the Matter, and *Potentia* of Spirits, as I have said: and becaus more Matter of less Extension is more Dens, therefore it is also more Grave; and becaus less Matter of more Extension is less Dens, or Rare, therefore it is also more Light: which plainly appears by Sinking or Swimming, as I have shewed. And more Grave Sinketh downward rather than Riseth upward through more Light, becaus it is more Dens, and Light more Rare: for all Matter tendeth first to Union with itself, and therefore it tends to the Center of itself, which is the Inmost Point within itself. And this Tendence we call Downward, which is indeed rather Inward. And as more Matter of the same Extension tendeth more swiftly to this Center, and therefore also is alway most forward, becaus it is more Dens, and consequently more strong in its kind, that is, more Ponderous; so for the same Reason it tendeth most strongly, and therefore passeth through more Light, which is more Rare, and consequently more Weak, unless it be also Consistent, which is from a Spiritual Quality, as I shall shew heerafter. And Globular Bodys of Matter though Equident and Equiponderous, yet becaus, as I have said, that Figure is most United in itself, do therefore Move faster than Angular, or any Bodys Equiponderous, but of more Superficial Figures, through the same *Medium*. And now I shall discover the wonderful Mystery of Divine Geometry in the



the Proportionable Locality of all Particular Bodys between the Center and Circumference of the Universal Body or Globe of the World : for as the Center or Inmost Point is the least, and the Circumference or Utmost *Superficies* thereof the largest ; so all the Spheres between these two as they are neerer to the Center, are less, and larger as they are neerer to the Circumference. Wherefore it is most Proper, and Geometrically Proportionable, that more Matter of a less Extension, which is more Dens, should be in a less Sphere, which doth best suffice to contain it ; and less Matter of more Extension, which is more Rare, should be in a larger Sphere which is more fitt to contain it. And thus the Globe of Earth and Water, which is most Dens, is seated in the Inmost Orb of the World, which is least ; and the Air, which is more Rare, in a Sphere next above it, which is more large ; and the *Æther*, which is yet more Rare, in the next above that, which is still more large ; and the *Superæther*, which is most Rare, in the the uppermost, which is largest. And this most Proper and Con-natural Situation of the Terraqueous Globe, and of all the Spheres doth rightly constitute both the Circumference, and the Center, of the whole World, and the most Symmetrical *Chorus* of all the Bodys thereof, as I shall shew heerafter. And certainly as there is but one Circumference of the whole Body thereof, so also but one Center ; for those two do mutually Relate one to the other : as there can be but one Circumference and one Center in any one Body. Now that all this Body is Matter we all grant, and I suppose no Materialist will, or can deny it. Also it must be granted (as I have shewed of Density and Rarity) that Gravity or *Pondus* is the Proper Affection of the Matter, and not of Spirits, (because it Subsists in the Density of the Matter) and that more Dens and Grave Bodys Naturally do sink through more Rare and Light. And that Sinking is to this Universal Center of all the Matter, which is Lowest, and Inmost, as the Circumference is Highest, and Utmost. Wherefore if any Particular Body, which is and must be a Part of this Universal Body of Matter, be more Dens, and consequently more Grave, it must Naturally sink through any other Bodys beneath it, which are more Rare, and consequently more Light, toward this Universal Center of the whole Body of Matter, which is the Centet of the whole Body of the World,

World, and consequently of all Particular Bodys, which are only Parts therof; and no Parts of any such Particular Bodys, which are also Matter as well as their whole Bodys, can sink Inwardly to any Center of Gravity in themselves, as to any such Particular Center: for then they should Ascend in departing from the Universal Center of Extension which is exactly *Centrum Graviorum*, to which all tend. And though more Dens and Heavy Bodys may sometimes Ascend to prevent Vacuity, yet that is not as to any such Particular Center, but only to fill the Universal Globe when more Rare cannot succeed, as I shall shew heerafter: Or if they be supported by any Consistent Body, though more Rare, that is only a Fulciment, and *Tanquam* a Natural Center unto them. Wherefore as all *Pondus* is of the Matter, and Matter only one Homogeneous Body in itself, so there can be but one Center of the *Pondus* therof; though as *Potentia* are of the Spirits, and they are severall and Heterogeneous, so there may be severall Spiritual Centers therof, (which are all of another Nature, and very farr Different from this one Universal Center of Matter) and though they be Radically most Dens and Strong in those severall Centers, yet their Motion tendeth Outward, every way, from the Center to the Circumference of their Particular Sphere of Activity, and not as the Matter Inward, or only Downward, from the Circumference to the Center of Rest: becaus Spirits are Active and Energetical, but Matter Passive and Torpid, as I have shewed. And now I shall proceed to prove this Center of the Universal Body of the Matter of the whole World, which as I have said, is also both the Center of the Extension & of the Gravity therof, to which all tend, or the Universal Center, to be in the Earth, which will also comprehend that other Question concerning the Center of the whole World. Certainly this is the constant Language of Scripture; and so it is said, that the Waters which covered the Earth were Beneath, and the Vapors in the Air, Above: and the Royal Philosopher saith expressly, The Heaven for Hight, and the Earth for Depth: and I suppose none can shew any one Expression in the whole Bible, which may seem in the least to color or favor the contrary Opinion. And the Reason therof is as apparent (which I have before sufficiently declared) that Earth being most Dens, and consequently most Grave, and Gravity being one and the same Affection of all Matter, and having but one princi-



pal Motion, which is Direct, must therefore tend to one and the same Term, which cannot be Outward, or Upward; for then Grave Bodys should Ascend; but must necessarily be Inward, or Downward, which therefore must be to one Inmost Point or Center of that Gravity. And I shall confirm this Motion of Descent by clearing a common mistake concerning the Ascend of Rare or Light Bodys: for as all Dens and Heavy Bodys do Descend, so also do Rare Proportionably; becaus they are only less Heavy, as I have said. As if a Pound Weight be put into one Scale, and two Pounds into the other, which will caus its one Scale to Descend, and thereby the other to Ascend; yet apparently the Pound Weight is also Heavy, becaus it weighs one Pound, though the two Pounds be more Heavy, and so caus that Scale Proportionably to Descend, and the other to Ascend. Thus the Motion of Ascend of Rare Bodys is indeed rather a being Moved, and their Ascend only a Violent Elevation by more Dens and Heavy Bodys, which crowding more strongly or swiftly to or toward the Center do Elevate and Extrude the more Rare and Light from it. Also Earth only is Consistent, and cannot be prevented in the Descent therof by any other Bodys which might be Fulciments unto it, as it may be to others; and all this doth Sensibly appear by any Terreous Body Descending through Water, and through Air, and so it would also through *Æther*, if it were in it, not particularly as to its Proper Element, by any *Potentia* of the Elementary Spirit therof, but generally as to the Universal Center of all Matter, by the greater Density and *Pondus* therof. For so if a Hole were made in the Earth from the Surface therof to the Center, Water would Descend thereby to it, as well as Earth, & if there were neither Earth, nor Water therein, Air would Descend likewise; and so if there were neither Earth, Water, nor Air, *Æther* or Super~~æther~~ would Descend likewise: though some pleas to phansy otherwise, and would make all the Planetary Orbs so many Worlds of themselves having their own Proper Centers, not respecting this Universal Center of the whole World to which all tend, but only consyder it as the Universal Center of Extension (wheras, as I have said, the Gravity or *Pondus* of the Matter is an Universal Affection of the Matter Subsisting in it, as well as Extension) which Absurdity they have Excogitated only to defend some others, which I shall also disprove heerafter. And though I might, if I pleas, believ a Travel-  
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ler who hath been in *Africa* concerning any Monster therein, yet certainly I should not much believ him who had never been there himself. Neither can I more believ any such Assertors concerning *Æther* (which being so Remote is commonly made *Amplissimus fingendi Campus*) but shall proceed in the known and beaten Road of Scripture, Reason, and Sense, so far as they extend, and as we can know, or judg thereby; and leaving these fanfys of vain men to themselves shall heer inquire into a more solid and true Secret of Nature, and such as deserves a more Curious Search: which is this, That as God hath placed all the Spheres in their most Proper and Connatural Situations by such Directive Principles in themselves and Symmetry of Nature, so in that Natural Position the whole Vast and Indefinite Body of the World, and all the Inconceivable Weight of the whole Matter thereof doth support itself thereby, withal Facility and Suavity, without any suspending Funicles above, or under-propping Columns beneath, and so without any Force or Pressure whatsoever. For though when any Particular Body or Part of the Universal Body thereof is Dislocated and removed from its Proper Station and Natural Situation therein (which is when any more Dens Bodys are above others more Rare) they then Move or Press toward their Proper Place by their own Gravity and Motion of Descent, being thereby Actuated to reduce them therunto (as the Magnetical Virtue doth Move the Body thereof being displaced towards the Poles of the Earth) yet when they have attained it, their Motion, which was Actuated before for that end, being now useles and needles is again reduced to Potentiality, and they then neither Move nor Press Actually any more, or any farther, nor have any Actual *Nisus* therunto; but having obtained their End are thenceforth in Peace and Rest; and their very Gravity is also suspended, and reduced to Potentiality, as the Magnetical Needle doth Rest in the North Point: which plainly shews what I said before, that though Gravity flow Immediately from Density, and Subsist in it, and Motion of Descent in the Gravity, yet they are Realy Different; becaus though the Body continue to be the same, and hath the same Density Actually both when it is out, and when it is in its Proper Place, yet when it is out, it hath Actual Gravity and Gravitation, and when it is in it, only Potential. And thus neither the Superæther doth Press upon the *Æther*, nor that upon the Air,



nor that upon the Water, nor that upon the Earth, nor the Earth upon itself; becaus they are already in their Proper Places; and therefore tend no farther: for the more Dens Bodys are Natural Fulciments and so farr Centers to the more Rare. And so the Proper Place of any Body is when being more Rare it is above more Dens, or being more Dens beneath more Rare, as I have said; or also being among Equident, whether above, or beneath any other parts therof, yet it is in its Proper Place; becaus it hath such a Natural Fulciment or Center sufficient for it, and there are none more Rare beneath it, through which it may or ought to Move according to this Statike Law of Nature; but the other Equident Parts whether above, or beneath it, are also in their Proper Sphere, which is the Proper Place of them all, and they can not otherwise be all in one and the same Point. Again I shall observ, that these Spheres being all Round, that Spherical Roundity must be filled, and so the Sphere Completed to render it the Proper Place of those Bodys wherof it is the Sphere, otherwise the Bodys will flow or fall every way to fill the Sphere, or any Chasme therin; becaus the lower parts of that Chasme will be beneath, or neerer to the Center of the World then the others; wherefore being Equident, they will all contend for one Equality or Spherical Community of Situation, which must Equally relate to the Center, and Circumference of the World. Also heerby it appears that these Spherical greater Bodys do not Move to the Center, nor respect it in Regular *Cylinders*, as less particular Bodys, Plummets, or Bullets falling through the Air, which seem to us to Descend in a most Directly Perpendicular Line, and serv for Measures therof well enough, becaus any such requisite Pyramidal Confirmity therof to the Center is not discernible by reason of their smalnes, (as smooth Water in a Pond seems to us Exactly Plane, and that *Planities* therof servs well enough to make a Water level) whereas any Quadrant, or Semiquadrant, or the like of those Proportionable greater Bodys respect the Center as Pyramids Inverted with their Cones Downward, and *Bases* Upward, which is their Exact Conformity therunto, and the way of their Gravitation and Motion of Descent; as we may easily understand, if we duly consyder the Relation of any Circumference to the Center. And therefore such Quadrants, and Semiquadrants, do not Superpend, nor consequently Superincumb, in such their

their Pyramidal Bases beyond their Cones. Yet I do not conceive of such Proper Places and Spheres that they are Magical Circles, or any such Phantastical Houses as Astronomers fancies to be in Heaven, but only, as I have said, Proper Localities of the whole Body of Matter and Extension of such several Spherical Bodys according to the more or less Density and Gravity therof. Much less do I conceive that the Center hath any such Magical Virtue or Attractive Power, nor that it is any Cavity, or the like, but only a Term which is the Midst, and Inmost Point, and consequently the Lowest of the whole Body of the Matter of the World Immovable and Inalterable, and relating to the Circumference therof, that is the Utmost *Superficies* of the Superæther, which is Ingenerable, Incorruptible, and Invariable, being the Universal Bound and Limit of Nature, and of all Bodys, and of the whole Matter and Extension therof. Having thus premised, I shall now examine the Pressure of the Atmosphere, which is so confidently asserted by some, though evidently there be no such thing, nor can there be any Rational Supposition therof, without a supposed Dislocation of the Body of the World, and offering Violence to Nature, as I shall now prove. God Created the Heaven and the Earth, and nothing beyond or without them; wherefore certainly they Press upon nothing, or do not Press Outwardly because there is no Outward thing to support them, or on which they might Press; but only they tend to Union Inwardly. And as the several Spherical Bodys of the Elements do not Press upon the Superæther, nor one upon another Outwardly, so neither Inwardly, as *Job* saith, *He hangeh the Earth upon nothing*, that is, it doth not hang or Press at all either Outwardly, wherof he spake before, *He stretcheth out the North* which is the most Terreous part of the Globe *over the empty place*, that is, the Air (as a Vessel is said to be Comparatively empty when it is filled only with Air) nor yet Inwardly, for it hangs upon nothing besides itself on which it might so Press, and it doth not Press upon itself, the whole Body and all the Parts therof being in their Proper Place, as I have said. And heer again, I must clear one Vulgar and common Error, which may be the cause of the contrary Apprehension, that is, That the Earth, and consequently the whole Globe of the World doth Press upon the Center every way, as upon a Foundation, that bears it up; or as two Bodys of equal Spiritual Strength



or *Potentia* Pressing one against another with all their Power, by such mutual Encounter and Resistance do forcible fix and settle each other Immovably in some midle Point between them: whereas though there be such particular Combats between Contrary Qualities, and the like Opponents in Nature, and so there are also particular Dislocations of Members in the Body therof, yet generally the whole Structure of the Body of the World (and so of the Atmosphere) is so Compos'd that there is no such Pressure, which Properly is not Nature but Violence, and the Descent of Heavy Bodys every way to the Center is only as to a Point, or Term, which they do not desire to pass, and therefore do not Press beyond it; and becaus Violence doth not long continue, there is therefore an Innate Principle of Motion in Bodys to reduce them to their Proper Place, whereby they may obtain that Rest which Nature Intendeth, and Abhorreth all such Pressure, Pain, or Burden. And heerein the *Pondus* of Matter and *Potentia* of Spirits do manifestly Differ; for whereas generally the Powers of Spirits Act to the utmost, Incessantly, and without any Rest, becaus they are Qualities of Active Principles (and so the Heavenly Bodys Move Indefinently) the Weight of Matter which is a Passive Principle affecteth Rest, and only tendeth unto it, and when and where it obtaineth it, then and there it Resteth, and the Actual Weight and Motion therof is thereby again reduced to Potentiality, as I have said. And I can not conceive any Reason nor frame any Notion in mine own Mind why, or how the Body of the World should Press rather or more Inwardly then it doth Outwardly, which is not at all. And if we could suppose any such Pressure, it must be either every way; which would accordingly Press and Squeez or only downward, and then every one of the *Terricola* should be Pressed Downward with a Proportionable Pyramid of the whole Body of the World so Inverted as I have shewed, and according to Mathematical Rule enlarging itself from his Head or Back or Hand on which it doth so superpend as the Cone, to the Utmost Circumference of the Super rather as the *Basis*: for it is all Matter, and there is no Consistent Body Intervening to prevent that Pressure, and so if one part of that Pyramid Press, all must Press: and if we compute the Inestimable Burden therof, it will be found Insupportable, and at the Atmosphere also to be so Comprest in itself, as would render

it no Atmosphere, or fit place of Breathing. But let us descend farther and consider the middle Point of the Earth and Center of the whole World; certainly no Poet can Imagin such an *Atlas*, or *Hercules*, as might so bear the whole Burden of the whole Body of the World being far greater then of the Heavens only, which they feigned them to bear up (though indeed the Imaginary Pressure therof be the greater Fiction.) And I appeal to the common Experience of all men, who with their own Hands can feel no such Pressure of the Atmosphere; (whereas it should Press the *Area* of the Hand Proportionably as much as 29 Inches of Mercury) and of every Diver, who can testify the Nonpressure of the Deepest Water lying upon him: and whosoever will not accept these for Experiments, but seek to evade them I know not how, he doth plainly thereby Invalidate the Testimony of all Experiment, and render it as Sceptical as some would make both Reason and Faith, since none can be more Sensible and Notorious then this which is by feeling, the Fundamental and least Fallible Sense: But I shall plainly clear by a whole Galaxy of Experiments, which I shall therefore collect into this one Statike Rule, That in any Body Internally Consistent in itself, or made Externally to Consist together, the more Rare Parts therof, being duly placed above the more Dens, do not Actually Weigh or Press the more Dens Parts below them, nor the Equidens Parts one another Perpendicularly. Whereby it shall plainly appear how a Particular Body so disposed is a Module of the Universal Body of the World in this particular respect: Thus in the highest Column of Timber, or Stone, or Coloss of Brass, or Pyramid of Brick, Perpendicularly Erected, (as they ought to be) no one Part therof doth Press another, supposing them all to be Equidens, (or only so far Proportionably as they are not so Equidens) for otherwise all must Press the very lowest and thinnest Physical *Area* therof, and then let all the Incumbent Weight be computed and compared with that *Area*, and the Strength therof, and I suppose the Impossibility of such a vast Weight and Pressure, to be born by by such a slender Fulcrum will easily be granted; when we see a whole Brick to be broken and battered only by a Cart-wheel going over it. Again let us consider other Bodys sometimes Actually Fluid, and sometimes Consistent; as a Firkin, or any larger Cask of Butter, Tallow, or the like; if it be uncased, and the

Upper



Upper and Lateral Parts of the Cask taken off from the Mass of Butter, or Tallow; yet it shall stand as firm as it did before, though there is at least an half hundred Weight Incumbent upon the *Area* therof. Whereas if you lay an Equal Plate of Lead or any more Dens Body, of the same Weight upon a thicker *Area* of the Butter, or Tallow, it will not be able to bear it, but be squeezed Outward; becaus the Equidensity and Equiconsistency of all the Parts of its own Body make them all to beat Rest, but the greater Density of the Lead doth Press them; and so if the *Cylinder* of Butter or Tallow were much higher, yet the upper Parts would not Press the neather until the Weight therof did overcome the Consistence, as the Lead doth by its Unequal Density. And if the Butter and Tallow were Melted and Fluid in the Cask, and then should be uncased, as before, they would Press and flow every way; but yet while they are contained Externally within the Cask, no Part therof doth Weigh or Press another. So in a Cistern of Water, while it hath no Vent, no one Part of the Water doth Weigh or Press another, nor would Oil, or the like, upon the Water, Press it. But though the Parts in these and the like Cases do not Weigh, or Press one another, yet the Whole Body whether Internally or Externally Consistent doth Weigh and Press the next Body beneath it, not Continuous and Consistent with it, or not Equidens. And so a Man bearing the Firkin or Cask doth feel the whole Weight therof, becaus the Parts Weigh according to the Whole; and so the Whole doth Press another Body, though the Parts of the same Body in such Cases do not Press one another. As a Pale of Water upon a Mans Head doth Weigh and Press according to the Whole, though a Fish in the bottom of the Pale under the Water doth not feel any Weight or Pressure therof; becaus the Fish is as a Part therof, and within the Pale, which is the External Term of the Consistence therof; and the Body of the Fish Equidens, or therabout, with the Body of the Water. But if a Body Naturally Consistent be not Erected Perpendicularly, as if a Column of Timber be held Obliquely, then the upper Parts therof do Weigh and Press Obliquely, according to the Obliquity therof; and so if any of the upper Parts do Superpend, they also do Superincumb Proportionably. As if a Pyramid Inverted (and be greater then the Pyramidal Proportion which I before mentioned) or a piece of Timber laid Transversly over  
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the Top of another. Which I conceive also to be the true Reason of the Proportionable Overweight and Advantage by Distances from the Center. But if a Fluid Body broader above then beneath, be in a Vessel of that Figure, yet the upper Parts being Equidistant do not Press the lower, because they all Rest together upon the Consistent Vessel, and only Press upon it. Again, if the Stopcock of a Cistern, or Gutt of a Water-mill, be opened, whereby the Water hath a Vent, then the Parts above that Vent, being not supported by the Consistence, and in Motion do Press one upon another Proportionably, and issue forth with a force Proportionable therunto. And any Parts which Move do accordingly Press, though there may be a Pressure without Actual Motion by an Actual *Nisus* or Endeavour thereof, As a Burden upon a Mans Shoulders doth Press upon them, though it doth not Move or Sink farther into them, and so a Weight hanging and not Moving Downward doth Press as well as when it doth Move.

XI. This is, as I conceive, the State of the Matter, which was created One Universal Body in the Beginning, Extended in itself through its whole Body, and having all its Parts beyond Parts, and so continuing Universality in the Successive Duration thereof, that as the Whole cannot be Extended more or less, so no Part thereof can be Divelled and Separated from all the others, and thereby be made another several Body, or less World in itself; nor is any Part thereof Annihilated, whereby it should be Diminished; nor any new Part Created, whereby It should be Augmented; but as it remains the same Universality in the Whole Substance, so also in the Universal Affections thereof, though they were first Generaly, and still may be Particularly Varied, according to the several Degrees thereof which were Potentialy in itself. And yet the whole Body thereof still is and must be the same, having the same Orbicular Figure, and the same Total Density and Gravity; because the whole Matter thereof is the same, neither more, nor less, then it was, being all Bounded with the same Circumference and Center; and so as one Elementary Part is made more Dens, or Grave, another is made more Rare, or Light. And all are Bounded with the Superæther, which is Super-elementary, and immutable. And as this Universal State thereof can not be Varied so it hath Universal Rest in itself, which is in-



deed this Universal *Status* thereof, and can not be Varied by any such Universal *Motus* which might Move the whole World. Also there is a General *Status* or Rest, which is the Station or Position of the Great and General Bodys thereof, as they were first Created in the Beginning, and afterward Ordered in Six Days; that is, of the Superæther, Æther, Air, Water, and Earth, which can not be Varied Generaly; though Particular Elementary Bodys are, or may be Particularly Varied, by Generation or Corruption: whereby the Extension, Figure, Density, or Gravity thereof, are so Altered. And yet in these Particular Variations thereof the Matter doth alway observ the Universal and General Law of itself, and of the Locality of its own Body, and of all the Parts thereof, by conteining all within the same Circumference and Center; and if any Elementary Part become more, or less, Dens in itself, by Altering the Particular Station thereof where it was before, and removing it to the General Station, and so if it be Violently Remov'd out of it, restoring it by a Natural Motion or *Nisus* of Restitution and Return therunto. Thus there is a double State or Rest of Matter, that is, either Universaly of Union, or Generaly of fit Station and Position therein; and as the Union is of Extension, so both the Rest and Motion to Union do, as I suppose, subsist in Extension: and as the Rest and Motion to Station is to the Center of Gravity, so they both Subsist in Density; which is also Analogous: for as Matter tends to Union with itself and hath thereby some Density in itself; so Dens, or more Matter of less Extension tends to more close Union or more Inwardly within itself. And this Union is the Foundation of the Universal Rest or Aquiescence thereof in itself, which is first and most Naturally affecteth; and of the other of Station which is next unto it, as being Convenient and Conformable to the other. And both these Rests when they are Disturbed are Recovered by that other Subservient Principle in itself, which is the Natural Motion thereof. And this Motion is not Actively Contrary to Rest, as Heat to Cold; and the like Contrary Active Quality; for Rest is not Active, but rather Privative or a Not moving in respect to Motion, and only a Positive Acquiescence of the Matter itself, Subsisting in it; as also Motion doth Move unto Rest as another Assistant or Auxiliary Affection thereof, and Subordinate unto Rest: (as Verticity is not Contrary, but Subordinate to Polarity, serving only to reduce Magnetike Bodys

Bodys to that fixed Position, which is the Polar Rest therof.) Which Rest Bodys do most Naturally affect, but being Dislocated or Disturbed, cannot attain it without Motion. And therefore Rest and Motion seem to some to be Contrary, becaus though Motion be to Rest, yet it is in itself Motion, and not Rest, and indeed it is Analogous to that which Moraly is termed *Invita Voluntas*. As when a man goeth a Journey, not willingly in respect of the Journey, and yet willingly in respect to Rest at Home: but as this Rest of Matter is Acquiescence in the Natural Union and Station therof, so Disunion or Dislocation are more Contrary therunto, which yet are not Contrary to the Rest itself, and are rather Privations of the Union and Station wherein Rest doth Acquiesce. Nor are any Different Local Motions, Upward, and Downward, and the like, Properly Contrary; but only Locally Advers, or Opposite; for they may be both from the same Principle of Motion to prevent Vacuity, and tend to the same Union of the Matter; though they may Vary the Station therof; becaus the Station, which is of Convenience, is also Subordinate to the Union, which is of Necessity. But to affirm that Bodys of Matter are in themselves Indifferent to Motion or Rest, and so being once put into Motion would Move alway if there were no *Obex* or Impediment, is most contrary to the very Nature of Matter, which would never Move itself if it were not first Removed by others; and of Motion itself, which is only to reduce it to Rest; and to all Sense: for we feel our own Bodys (and so do all other Bodys) as they are Bodys to affect Rest, and return unto it as soon as they may: though while they are Moved by the Active Spirits they can not Rest in themselves; but Distinctly considered in themselves as Bodys, they are only Passive; and so indeed Naturally apt to be Moved by the Spirits, but not to Move themselves; and Torpid, having no Activity in themselves, whereby to resist the Spirits or *Potentia* therof, but only a Dull *Pondus* or Heaviness. And that Natural Affection of Union or Station which is in themselves is not any such Power or Strength as the Consistence of the Earth, wherof I shall discourse hereafter, but only a Stupid Acquiescence in itself. And that very Motion, whereby they preserv their Union, or recover their Station, is only an Infirmary, that is an Inclination unto, and Recumbence of one Body upon another, for a mutual Support; or a Succumbence or Sinking and Falling Downward, for want



of such Support: which are all Symptoms of Weaknes, and not of any Strength. And all the Motion of Matter is only Local and not Active or Operative in itself, like the Motions of Spirits, but as an Instrument of their Spiritual Qualities, as I have said. Nor is Local Motion strictly considered as such in itself either the Action of the Mover, or Passion of the Moved, nor both the Action and Passion of any Automatus Mover and Moved; but the very Moving, or Transition from one Place to another. And thus, *Eo, Curro, Fugio, Volo*, and the like Words of Local Motion, are all of a Neutral Signification, neither Active, nor Passive. And though thereupon doth ensue a Variation of the Distance of the Body Moving from or toward all other Bodys in the World, yet its own Motion considered in itself is only a Variation of its own Locality; and that Body itself only so Moveth, and none other Body is thereby Moved besides itself, (unless it be also Impelled or Attracted by it otherwise) but Resteth in its own former Locality which it had in the great Body of the World. Otherwise when any one particular Body Moveth, all other particular Bodys in the whole World, and all Parts of Bodys which are thereby Distanced more or less from it, or toward it, or this way, or that way, according to the Motion of that one Body Moved; should likewise be Moved thereby. And so if Matter and Motion were the Natural Principles of Generation and Corruption, as some affirm, then by such Motion of any particular Body (which is a Part of the Matter) and of all the Parts and Particles therein, and consequently the Generation and Corruption thereof by such Motion, all other particular Bodys, and all the Parts and Particles thereof, should be conformably Moved, and consequently so Generated and Corrupted; which doth confound their own Principles. *Oportet esse memorem.* But I do acknowledg that as the Body is the Subject Matter, so also that the Local Motion of the Parts and Particles thereof is very Instrumental in Generation and Corruption by Spirits, which are the Movers, Operators, and Architects thereof, whereby they make fit Seat and Offices for themselves; whereas otherwise the Body or Matter hath in itself only that Principle of Local Motion, which is to Union and Station, as I have shewed: and though Spirits may Vary the Station, yet they can never Vary the Union of Bodys, because they are also within the same *Obi* of the Circumference of the Universal Body of the World, and the

the whole Extension thereof, which therefore they may not break; or transgress; and they Inhabit in several Stations thereof, according to the Nature of those Bodys which they require; or if they require no Body, as Angels, they may indeed pass through the whole Globe, but can not go beyond it, as I have shewed. But Rest and Motion to this Union and Station are, as I have said, Affections of the Matter Subsisting in it Mediatly, but Immediately in the other Proper Affections thereof; that is, Rest is the Acquiescence of Matter in that Union and Station, and Motion the Tendency of it therunto. Now from this Union or Unionion is the Adhesion of Matter which is more Naturaly and Necessarily effected thereby, then by or with any Adamantine Chains or Ligaments whatsoever: for so Nature alway worketh her own Works by her own Natural and Internal Principles, and needeth no such Artificial or Mechanical Hooks and Clasps, and I know not what Intangling, rather then Uniting Figures, which some have vainly Excogitated. Whereas the very Homogeneity of the Matter Inclined it of itself to Union with itself; and Discontinuity is only from Heterogeneous Spirits, as I have shewed, which make several Heterogeneous *Composita*, that are therefore Spiritually Continuous only in themselves, and Contiguous one with another; and yet even in them all, the Matter is still Continuous to and with itself, as it was before, and so continues to be one Universal Body of the whole World. Nor is this Motion to Union so Powerful in Spirits as it is in Matter, because it is not so Necessary in them: yet any Homogeneous *Composita* are not so easily Discontinued or Severed, as Heterogeneous; and therefore have also their Motions of Restitution; and some, as Magnets, do not only Incline, but notably attain this Unionion of their Spiritual Homogeneity, wherof I shall Discourse hereafter: And now will proceed farther to inquire into the Degrees of the Motion of Matter, and of the Velocity thereof. I have said before, that more Matter of less Extension or any Dens Body Moves more swiftly; which is one Internal Cause of the Velocity thereof: And so also the more or longer it Moves, it Moves more Swiftly; which is another Internal Cause thereof: and it is not only from the External Motion of Restitution in the Air, above, or behind the Bullet, or other Body falling through it, which did Impell and Violently Dimove it, and so when the Bullet is past



through that Part of the Air, which was so Impelled and Dimoved, it returns smartly again by that Motion of Restitution behind, and upon the Bullet, which may give the Bullet some small Impuls, and so caus it to Move somewhat faster; and then the Bullet Moving faster, Impells and Dimoves the next part of the Air more forcibly, which accordingly increaseth the Motion of the Restitution thereof, and so causeth the Increments of the Velocity of the Motion of the Bullet. And the Bullet in Descending also Impells and summoves that part of the Air which is beneath, and before it, and that part the next; and so prepares a way, or *Vortex*, for itself, whereby it may more easily, and consequently more swiftly, Descend. But, though it be true, that either Addition of Force, or Subtraction of Impediment, may Accelerate Motion, and heer perhaps both together do concurr, and may somewhat conduce therunto; yet I am not so Curious as others, to apprehend, either, or both of these, to be sufficient and the only Causes of so considerable an Effect, as the notable Increase of Velocity of Motion in such Descending Bodys; but rather ascribe it to the Internal and Proper Nature of the Motion itself; which being capable of such Degrees in itself (as well as Density in which it doth Subsist) and while the Body was in Rest was only in Potentiality, and no Actual Motion, till it began to Move; and as it then begins to Actuate itself, so the longer it continues, it doth still Augment itself more and more by Degrees in the Natural Motion thereof to the Center. And there is no such Increment of Velocity in the Weight of a Clock moving *Sensim*: Nor is there any Attractive Virtue in the Center itself, as I have said; becaus that is only a Point wherein such Virtue can not Subsist, and only a Term of Locality Downward which God hath Immovably fixed and ordeined so to be, as the Circumference is Upward, and it doth no more Attract Downward then the other doth Upward. And any Equal Weight in the same *Medium*, whether it be placed in a higher, or a lower part thereof, Weighs and Moves Equally, first; and according to the continuance of the Motion, so are the Degrees of Velocity. Nor is it from the Magnetike Virtue of the Earth, for such Motions are Proportionably Equal, as I suppose throughout, and not *Per Gradum*, but *Per Saltum*, as I shall shew heerafter: and I know no Difference heerin, between a Bullet of Lead, and a Bullet of Steel, or Magnet, so Descending. And the common Observation

ſervation that Natural Motions are Swifter, and Violent Slower toward their End, is not generally true of all, but only of the Matter: for the Planetary Motions are Natural, but Equal. Which Inſtance may well prove what I ſaid formerly, That Spiritual Motions are for Motion and Action; but Motion of the Matter is only to Reſt; and therefore Slow when the Body is firſt Removed from its Reſt, any Remotion from which it Diſaffecteth, and Swifter as it draweth neerer to the next place of Reſt, which it Affecteth. Alſo this plainly ſheweth that Motion of Deſcent is Really Different from all the former Affectiōns of the Matter, becauſe it ſo Varieth itſelf, though they continue the ſame. Now it is alſo obſervable that according to the Increaſe of the Swiftneſs of the Motion, ſo is alſo the Strength of Percuſſion: for Swiftneſs is a Conſpiſſation, or as I may ſo ſay Condeſation of the Motion, and all Condeſation being an Union doth fortifie. Again, as Motion is an Advantage of Percuſſion, ſo it is alſo of Penetration; becauſe Penetration is by Percuſſion; and a Swifter and Stronger Percuſſion maketh a Swifter and Stronger Penetration: which is obſervable in Bows, Baliffs, Catapults, and the like; wherein the quick and ſmart Delivery maketh the great Percuſſion and Penetration; and Time is very conſiderable heerin; for if the Percuſſion be ſo Strong and Swift, that the Body Percuſſed hath not requiſite Time to Reſiſt, it pierceth through it, as if it were only a *Medium*; as a Bullet ſhot Directly through a Bord, or Glaſs, maketh only a round Hole in it; whereas the ſame Strength, not ſo Swift, would make it firſt Bend and Cleav, or Break, which ſhew a Partial Reſiſtance. And ſo if the Percuſſion be more Swift then Strong, whereby it hath not requiſite Time to Penetrate, it will be more Reſiſted; as a Bullet ſhot Obliquely will Reſlect from Water, or as they ſay Graze; as alſo Oiſterſhells (wherewith Boys uſe to make Ducks and Drakes as they call them) whereas in more time they would Sink into the Water. Alſo all Motions of Percuſſion or Penetration are Violent as to the Body Percuſſed or Penetrated, though the other may Move Naturally, as a Bullet falling through Air, or Water, Naturally Downward, doth Violently Percuſs and Penetrate the Air or Water, which is thereby Diſlocated, and Violently Elevated, as I have ſaid: and it ſeems to me that even that Motion of the Bullet is alſo as it were Violent in reſpect of the Place of Reſt from which the



the Bullet first Moveth, which maketh it to be so Slow at first; and only Natural in respect to the next Place of Rest to which it Moveth, which maketh it so Swift at last, as I have said: but the Bullet shot is first put into Motion by the External Impression, and that Motion being wholly Violent is Swiftest at first, and Slowest at last. And yet the Motion continueth Proportionably according to the Impression, though that last no longer then the very Contact, and is Discontinued with it. Nor can I conceive that there is any Continuation thereof, or Magical Line of Motion, between such a Mover and Moved, as some have fancied: for the Impression, being an Accident, must necessarily Subsist in its own Substance, and can not Migrate into another, nor is the *Potentia* which maketh the Impression Emanant, but Inherent. Certainly this is a Mystery in Nature, and I know no Instance which doth more seemingly prove a Migration of Accidents, and I suppose the disproving heerof will very much confirm the contrary Truth. Now, as I have said before, the Matter having Naturally in itself Motion is putt into it, and the Motion Actuated by any Violent Impression; as well as by Natural Tendencia to Union or Station: and that which is most wonderful heerin is, that the External Impression doth not only Actuate the Motion at first, but Divert the Natural Tendencia thereof Downward, and Direct it another way. But as I have said, there is in Matter not only a Motion to Station which is Downward; but also to Union, which is generally Directed by the other Downward, but may be any way; as sometimes it is Upward: and this Motion which is most Natural and Principal, is also the Universal Motion of Matter; and being Diverted, and Directed Violently, by the External Impression, doth carry the Body that way, yet so as it doth only Divert, and not destroy it, or the other Notion of Descent, which more Particlylarly is to Station, and that is Particularly also Natural, whereby the Body hath still a *Nisus* and Inclination that way. And the Diverfion of the Motion being Violent is, as I have also said, Strongest at first, and the Natural Weakest; and so the Violent Diverfion doth overcome the Natural Motion of Descent, and Proportionably Divert it, as in Flying or Swimming; and while it doth Totally prevail against the Motion of Descent, carrieth the Body in a Direct Line and Level any other way, though with some Decrement of the force: so that a  
Bullet

Bullet shot out of a Gun doth not Move with an Equal Force so long as it flies Levell, as may appear by the Unequal Execution that it doth at a neerer or farther Distance within that Levell, and so doth Decreas by Proportionable Degrees: or if it be shot Perpendicularly Upward it will Decreas in Swiftnes and Strength till it return again Downward, which is the very Difference between such Violent and Natural Motions heerin. And as Rest and Motion are seemingly Contrary, and yet Motion is indeed Subordinate, and Subservient to Rest, so is the Natural Motion to this Violent Diversion so long as it is Predominant over it. All which I shall manifestly approve by the common Experiment of a Ball Rebounding from a Paviment of Stone. Certainly the Ball first falls Perpendicularly upon the Paviment by its own Natural Motion of Descent, which being greater then is sufficient to carry it to its next Place of Rest, and being stop'd by the Stone, is Reflected Upward, and that is a Motion Diametrically Oppolite to the former, and is by reason of that Diversion and Direction, which it receiveth from the Paviment Externally, and yet not by any Continued Impression therof, but only from its own Natural Motion Actuated in itself, and so Diverted and Directed thereby. For the Paviment of Stone, being Consistent and Quiescent, can add nothing to it, nor make any such Impression upon the Ball; as an Hand may by throwing or beating it back; or a Racket by the Springiness of the Strings, first yielding, and then Repercussing it; nor is there any such Springines in the Ball which falleth upon the Paviment, and there is the same Motion of a Marble, or the like most Consistent, and not Springy or yielding Globules. But both the Direct and Reflex Motion are from the Ball or Marble themselves, and the Motion therof, as the Emanation of Rays, which are Naturaly Reflexive, aswell as Emanant. And as the Buller, so also the Ball, or Marble, by their own Natural Motion so Diverted, do by Degrees prevail against that Violent Diversion, and at last attain their Natural Rest. And I suppose, that if an Hole were made through the Body and Center of the Earth, and a Bullet drop'd in it, the Bullet would pass beyond the Center forward and backward, like a *Pendulum*, or Needle by its own Motion Actuated in itself, and so by Degrees return to it. Now if the Ball or Marble fall by a Diagonal Declivity, as from a Penthouse, Roof, or Hill, or the like; then, becaus it halt Rest-



eth, and half Moveth, that Motion acquireth only half the Increments, or Degrees of Velocity, and may describe a Quadrant of a Proportionable Cycloid in the Descent afterward upon the Paviment; and as I suppose a *Granado* shot from a Mortarpiece Diagonally doth from the Angle of Inclination, or *Zenith*, describe such a Quadrant between the Perpendicular and Arch of the Circle: which I leav to the Curious more Exactly to determine. And there is the like Reason of the Semicircular Vibrations of the *Pendulum*: wherof the Center of Extension is the Point where the Line hangs, and whereby the *Pendulum* is Produced to the Extremity of the Semidiametrical Plane, where the Arch thereof begineth Downward, and then is let go, but cannot Descend Perpendicularly Downward, becaus the Line which is suspended at the Center doth stop it, and so Divert and Direct its own Motion of Descent accordingly to describe almost a Semicircle half about that Center, which it plainly doth, without any External Impression or Reflexion from any other Body, but only by its own Natural Motion so Diverted and Directed; and by Proportionable Decrements, as is aforesaid; (as the Needle of the Compass doth also so Move Horizontaly by a greater Motion of Verticity then is sufficient to reduce it to the Pole) and so at last the Natural Motion prevailling against the Violent Diversion, it Resteth Perpendicularly upon the *Nadir* of the Arch which it describeth, and is Correspondent to the Center of the Perpendicular Line. And probably such Decrements of Violently Diverted Motions are Proportionable to the Increments of Natural Motion. And perhaps Motions of Restitution, which are Spiritual and from the *Potentia* of Spirits, are heerin Analogous to the Natural Motion of Matter: and so a Spring of Steel beat one way seems to make one Vibration almost as much the other way; and the many Vibrations in the Torricellian Experiment are from such Causes. It may be also inquired, whether there are such Increments of the Natural Motion to Union Upward aswell as to Station Downward, as whether a Bullet which is suck'd up by a mans Breath through a longer Musket barrel doth Ascend more Swiftly and more Strongly, then if it were shorter; or *Per Saltum*, like the Motion of Magnets? for it is by the Sucking and Expanding of the Included Air thereby, which when it is so far Expanded, that the Retractive *Potentia* thereof is more Præpotent then the *Pondus* of the

the Bullet, and the Air being still suck'd the Bullet doth by the other Motion of Matter to Union, as Naturally follow it to prevent Vacuity (which I shall shew heerafter) as if it did Descend by the Motion to Station, or at least equally as swiftly at last as at first like *Æther*. And I shall now observ one thing more in such Diverted Motions (which I have before intimated) that if the *Impetus* or Force therof, which is so Actuated, be greater then can be spent in carrying the Body Moved forward by reason of the Resistance of the *Medium*, or otherwise; then it not only so carry's it Directly, but the Excess therof doth also Move the Body Circularly. Thus a Bullet or Arrow discharged Violently from a Gun or Bow, besides the Direct Motion therof, Moves also Circularly. And so in a Whirlpitt which hath a Vent at the Bot om, whereby all the Parts of the Water above it are putt in Motion, as I have shewed, and yet can not all Descend and issue out together, therefore they Move Round, as also Water in a Boiling Pott: and so in the common Experiment of Water Ascending from a Basin, wherin a Flaming Candle or Charcoal kindled at one end is Perpendicularly fixed above the Water, and then an Urinal, or the like Vessel Inverted over it into the Water in the Basin, the Water will Move Round in the Basin when it begins to Ascend into the Urinal, as may appear by any Motes swimming in the *Superficies* of the Water. And so I conceiv it to be a general Rule, That if a Body in Actual Motion, so farr as it can not, according to the Actual Motion therof Move Directly, the Parts therof will Move Circularly. Now becaus all Circular Motion of the same Body, and in the same Place hath to some seemed so very Wonderful and Inexplicable; I shall heer endeavor to explain it, and grant that which is the very caus of their Wonderment, that is, that all Local Motion is, and necessarily must be, Progressive; becaus it is from Place to Place: but we must also consyder, that such a Circular Motion is Immediately of the Parts, as of the aforesaid Motes in the Water, and accordingly of all the Parts of the Water, Circularly, and consequently of the Whole, Mediatly thereby: and so the Parts Move Progressively, and Successively, from their several Positions and Places in the Whole, which they have in their own Body, as well as their own Body hath in the Body of the whole World, East, West, North, and South, which is the very Nature of Place, as I shall shew heerafter:



and consequently by them the Whole Moves Circularly also in its Place, wherein it was, and still is; but only is Locally Varied or Moved according to that Variation and Motion of the Parts being itself in the whole where it was before: and certainly all the Parts may aswell Move so Simultaneously in Time, and Successively and Orderly in Place, as the Motes; and the Motion of the Whole doth thereupon as Naturally and Necessarily ensue: And so a Planet Moves about its own *Axis* Immediately by the Parts thereof, and it Moves about the Sun Immediately by the Whole as a Part of that Circle which it describes Progressively, though in a Line Perpetually Curv, And in such Motion of a Fluid Body any way, the Parts thereof do so far forth Weigh, Press, or Move, one another: as a Diver shall find in any *Vortex* or Stream, if he oppose himself against the Current thereof, but not in any Progressive Motion of the Whole as when he swims along with it, which is a Sensible Difference. And this may help also to save another Difficulty, which hath been esteemed Incomprehensible. How a Body Moving Circularly should Move Round in the Circumferential Parts thereof in the same Space of Time as in the Centrical; since the Circumferential describe larger Circles, and Move through a greater Space or Distance of Place then the Centrical, and yet both by the same *Pondus* or *Potentia*. Wherein we must consider that the *Pondus* or *Potentia* being Equally applied to the whole Consistent Body Moved is distributed Equally to all the Parts, but doth Unequally Move them according to their Unequal Distances from the Center, whereby the Circumferential being Proportionably more Moved by their Equal share thereof, according to those Distances, do Move Swifter, or through Proportionably larger Circumferences though Simultaneously in the same Space of Time, which is an Equality in Inequality; and both are Proportionable to the Nature of the Consistent Body so Moved thereby, and the Distance of the Circumferences thereof from the Center. Also there is a Motion of the Whole partly Progressive, and partly Circular, As when a Coach or Cartwheel in going forward Moveth Round. And hence hath arose another Problem. How such a larger and a less Wheel being both fixed upon the same *Axis* should Move upon lower and higher Planes with Equal Circumvolutions. Which needeth no such Solution as the former, because it is a plain Fallacy: for in such a Position and Motion

Motion the larger Wheel Moves Round by Perfect Circumvolutions, and the less Wheel partly Slides along (as well as Moves Round) so far as to equal the Circumvolutions of the larger Wheel: for indeed otherwise it were Impossible that one Circumvolution of a less Wheel should Equally run over so much of the Planes, being both of the same Longitude, as of a larger, because their Circumferences are not Equal. And this Fallacy may sensibly appear by not fixing, but putting both the Wheels loose upon the same *Axis*; and then you may plainly perceive the Exact Difference of the Circumvolutions Proportionably according to the Difference of the Circumferences.

XII. Local Motion, as I have said, is Transition from Place to Place; and doth therefore import Place; which is Relative, and not only the Position of a Body in its own Extension otherwise then as the Parts thereof are in their Respective Places in the Whole. And therefore no Body is said to be Locally in itself, or in its own Whole Positively, but only Relatively: as we do not say *England* is in *England*. Wherefore also the whole Body of the World is not Properly in a Place, but in its own Position and Extension, which is not Properly a Place Positively in itself, but only Relatively to all the Parts thereof, and without it there is no other Body, in respect whereof it may be said to be in such a Place. Nor is Place the *Superficies* of other Bodys Ambient; for not only the whole Body, but every Part within the *Superficies* of itself is also in a Place, which, as I have said, it Varyeth in a Circular Motion of the Whole, and yet the Whole is in the same Place and Vicinity of Bodys: and so is also every Point thereof in a Place according to its own Proper Nature, that is, as it doth Coexist with others, and so Commove with them; so it is also Collocated with them, though not severally by itself alone: wherefore also the *Superficies* of its own Body is not the Place thereof, nor indeed can it be so many several Places: but as Extension hath Part beyond Part, which therefore is not one and the same Position of every one Part severally in itself, because every one hath a several Position in itself; so the Place thereof is the Relation of one to the other in the Whole, or as it is Beyond, farther, or neerer, heer, there, and the like; which is not only a Notional Relation, as First and Last in Extension, but Real; because



caus Extension hath Realy Part beyond Part, as well as Time hath Realy Part after Part, as I have formerly shewed. And so Circumference and Center are Real Relations of Extension, and there are Real Advantages of more or less Distance of any Parts from the Center, as I have said. Now according to this Real Relation, a Body is said to be in such a Place or Part of the whole Body of the World, and not in another: And if the whole Globe of the World were a Magnet, it should have a North and South Pole in respect of its own Parts, and so all the other Points of the Utmost, or any other Inner Circumference therof, though there be no Body beyond it to which they may so Point. And so *England* is said to be in such a Part of the World, and not in another; and *London* in such a Part of *England*; and not in another; and so of any less Bodys, as the Parts therof are Relatively Distant more or less from the other Parts of that Body, or of the whole Body of the World, or their Situation any way Varied. Again, as there are such Real Places, so also certain Real Stages and Posts, which God hath Realy fixed in the World, as the Circumference and Center of the whole Body of the World, according to which any Part or Particular Body therof is said to be Higher, or Lower; that is, more Outward or Inward, and two Poles of the Earth wherof the *Axis* doth Intersect the Center by one determinate Line ending in two certain Points, and so directing it, and thereby determining North and South, and consequently all the Points of the Compass. And so there are also two Opposite Circumvolutions of *Aether* and *Aethereous* Bodys, which Denominate East, and West, in all such Circumvolutions, one way, or other, as I shall shew heerafter. And according to these Real Differences I suppose all the several Localities and Motions of any other Bodys in the World, (which may be as Various as all Mathematical Figures) may be Determined and Denominated. Also becaus all Spirits whether Material or Immaterial are within the whole Body of the World which no one of them can Possess, or fill, or be Coextended with it all; therefore they are in some Definite Place, or *Ubi* therof, and not in another, according to that Proper Place of the Matter which they Possess; though Matter itself be only in such a Proper Place Circumscriptively and Extensively, becaus it only hath Extension of itself; and Spirits and Spiritual Qualitys by being Localy therein do acquire such a Definitive Coextension therewith  
and

and thereby ; which Coextension is the *Commune Vinculum* of Matter and of all Spirits, whereby such are Immaterial, and do not Consubstantiate Matter, nor Inhere in it in *Statu Conjuncto*, as Angels, Magnetical Virtue Emanant, and the like, yet are in it and in some certain *Ubi* thereof (though in *Statu Separato*), as well as the others : and their Coextension is the same, though there be not the same Consubstantiation, or Inhesion as I have shewed : and the other which we call Material are indeed no more Matter, nor Material, then Angelical Spirits ; but only so termed by way of Distinction from such their Consubstantiation and Inhesion being in themselves truly Spirits in Bodies (as I have therefore so called them all by one general Name) as well as Angels out of Bodies, (as Inherent Magnetical Virtue is a Spiritual Quality, as well as Emanant) and though they be indeed Inferior and less Spiritual Kinds of Spirits then Immaterial in many other respects, and therefore so distinguished, as I have said ; yet they are all of the same Universal Kind, or *Genus* of Spirits ; and so as much Contradistinguished from Matter : & therefore are no more Matter nor Material in that sense one then another. Which I shall again and again desire Materialists to consider, and remind ; and rightly to understand these Terms of Material and Immaterial Spirits, as I have explained them, and to judge thereof according to the Things themselves, and not of Things according to mistaken Terms, or otherwise to waive the Terms wholly, and call Matter Body, and every such Form or Substantial Activity Spirit, whether Conjunct, or Separate ; and so to apprehend them rightly in our Minds, as they are in their own Nature. Whereas some, who have not so cleared these Terms and Notions to themselves, either affirm all Spirits to be Matter, or that there are only Material Spirits. And I begg of every Christian Philosopher, who believeth that there are Angelical Spirits, and Spirits of Men after Death, thus Separate from the Matter, only as freely and fairly to Contemplate them in his Mind, as he doth the Matter ; and Spiritual Qualities, as he doth the Corporeal Quantity, and so prepare himself to be a fit Judge of what I shall prove unto him beyond any Postulation ; and I hope that thereby every Materialist may so Purifie and Spiritualise his own Immaterial Mind, which is now too far Immersed and Engaged in the Matter, that he may also himself clearly discern Spirits and Spiritual Qualities by his own Spiritual Light



Light beyond all my Probations: whereas some, because they do not Distinguish between Extension and Coextension, therefore Confound Bodys and Spirits, and so, because they do not distinguish between Extension and Matter, therefore Confound Substances and Accidents, and because they do not distinguish between Extension and Vacuity, therefore Confound Entity and Nonentity. And though they will not allow Spirits to be in the Body of Matter, and the Coextension therof to be their *Ubi*, yet they can Suppose Matter itself and the very Extension therof to be in some other *Ubi*, or something which they call Space, and which must either be another Extension without a Body, or the same, or Nothing: though, as Position is only a particular Consideration or Notion of Extension (as the Body or any Part therof is in its own Extension) so Space is only another Particular Consideration or Notion of Extension, as the Body or any Part therof is in so much of that Extension: and neither of them are Really any Things in themselves Absolutely, as Extension, or Relatively, as Place; and though these are such particular Notions of Something Real, that is of Extension: yet Vacuity considered in itself as no Extension of Matter can not be so much as any Notion whatsoever of any thing Real: for then it should be Space which Really is the same with Extension of Matter, wherof it is only such a particular Notion: Wherefore they must conceive it to be another Extension without Matter; or, as I may so say, another Imaginary Extension of Extension, or that wherein both the Matter and also Extension therof is; and so we may proceed Infinitely: but all such Process Infinite is most Contrary to Finite Nature and to all Philosophy; because, as I have said, it is only the vaine Reduplication in Terms of the same Thing in itself. Now if Matter and Extension were one and same, then Matter needeth none other such Imaginary Extension, or Vacuous Space, wherein it may be Extended, because it is Extended in itself; otherwise it should not also be Extension: or if Matter be the Substance, and Extension the Proper and Inseparable Accident and Affection therof, then also it needeth none other such Imaginary Extension, or Vacuous Space wherein it may be Extended; because it is Extended by its own Extension. Wherefore Vacuity is neither Matter, nor Extension, nor any Real Relation, nor Notion therof, nor indeed any Thing, or Entity whatsoever, but meerly Nothing or Nonentity, wherof it is only a particu-

particular Conſideration or Notion; as Nullity or a Cyphar is of Number, or Nontime of Time; and the like Improper Non-finites, wherof I have formerly diſcourſed. Nor is it any Privative founded in Positives, which thereby Complexively may be Conſidered, and ſeem to be Som hing, but a particular Negative, and the very Negation of that which is the Reſpective Affirmative Being, that is, both of Matter and Extension: and ſo it is neither Long, nor Short; Broad, nor Narrow; High, nor Low: having no Longitude, Latitude, or Profundity; otherwiſe it ſhould be the ſame with Extension; which we all acknowledg, and ſhould not differ about Terms: but as conſidered ſeverally from it, it is Nothing, and Notſinite, and ſo conſidering it I need not diſprove it, for it plainly proves itſelf not to be; being only a Negation, which is its own Denial of what any would Affirm or Imagine it to be: and ſo *Vacuum eſt Nonens*, or *Vacuum Non eſt*, or *Non eſt Vacuum*, are tantamount. Yet becauſe ſome are ſo fond of it, that not only like Lovers they feign it to be that which it is not, but I think would almoſt like Paraceliſians Create it to Be by their own Imagination therof, I ſhall briefly argue againſt it. And certainly there is no ſuch Vacuity, becauſe God himſelf never Created it, nor indeed can he; becauſe it is a Nonentity, which is not Creable, but, as I have before ſhewed, the very Negative Term from which Creation doth commence, and which doth neceſſarily Cauſe that to Be which it Creates; becauſe Being is the other Affirmative Term of Creation, which is from Not being to Being. And whereas it is commonly demanded, Whether God could not Poſſibly have Created two or more Worlds having Such a Space or Diſtance one from another, or one Part of this World having ſuch a Space or Diſtance from another? I anſwer, He might; if he did alſo Create ſuch a Space or Diſtance (which as I have ſhewed, is Really Extension) without any Body or Matter, which I ſuppoſe they who aſk the Queſtion, and any Materialiſts themſelves will not ſo eaſily grant, and they who affirm the Extension itſelf to be one and the ſame with the Matter, wherof it is the Extension, muſt by granting it, deny it, and ſo Contradiſt themſelves: for then that Extenſive Space or Diſtance muſt alſo be Matter: The Philoſophers Reason againſt Vacuity, That then two Bodys ſhould not be together, and yet no other Body, nor conſequently any Extension or Extenſive Space therof, nor indeed any Thing,



which may Disterminate them, be between them; is so very true and Cogent, that I profess to dispute no farther with him who shall deny it, until he can shew me the Fallacy, or Infirmitie, therof. Sensible Experiments against it are manifold; and there is such a Constellation therof in the whole Sphere of the Universal Nature, that I shall collect them all into one Statike Rule, that is, no Weight nor Power can wholly Remove any Body out of the present Place therof (though it may Rarefy or Expand it and so Exue part therof) unles another Body may Succeed: and if it do so Remove any Body, another doth Naturally and so must Necessarilly Succeed. As let Air be suck'd out of a Bladder the Sides therof will Proportionably Approach, and at last Close together; and if by an Airpump or *Expansor* the Operation should be so Strong as exceed the Consistence and Strength of the Glass, such an Exuction would also break the very Receiver. Now certainly there is no other Caus or Reason of the Adhesion of the Air to the Bladder, or Glass (which are Heterogeneous, and therefore Discontinuous Spiritually) but only the Continuity of Matter and Motion therof to Union, as I have said: which is to prevent Vacuity, or any Discontinuity of the Universal Matter. So in a *Siphon*, though the overweight of Water in the longer Leg be requisite, yet the Motion of Descent by the Gravity doth not otherwise Caus so great a weight of Water in the shorter Leg to Ascend then only by its own Natural Deceffion whereby the other doth as Naturally Succeed, as may appear if any Air be lett in at the top of the *Siphon*: And it is not as when a Preponderous Weight or Prepotent Power at one end of a Rope draws up a less Weight tied to the other end therof: for as Air is not so fastned to the Bladder or Glass which are Heterogeneous, so neither Water to Water, though Homogeneous, becaus Water is a Fluid Body, and hath no such Consistence as will endure any such drawing, but only such a small and weak Consistence, as I shall shew heerafter. But one part therof in the *Siphon* is so United to another by this Natural and most Indissoluble Ligament of Adhesion and Union of Matter to Matter, so that for the Necessary Completion of the Universal Body therof, so great a Weight of Water doth Succeed, otherwise Water in the *Siphon* might run at any hight if the overweight were the only Caus. And Air Rarefied by Flame in a Glass, though much Lighter, Draweth up Water, which is Heavier,

vier, by being again Condensated in itself by Cold after the Extinction of the Flame or Fire, whereby it occupys a less Space; and the Water doth Succeed it, and Ascend as Naturally to prevent the Vacuity as it doth Descend in a Whirlpitt; Yea as I have shewed this Motion to Union is most Natural and Predominant, even over Motion to Station, and no Body can Move any way in the whole Orb of Matter by any Private Motion whatsoever, unles the Universal Body therof be first Completed. And therefore the whole Body of the World is, and must be, as I have said, Orbicular; not only becaus the Superæther is most Rare, and therefore I suppose most Fluid: and all Fluidity doth Naturally Conglobate, as I have before shewed: but though we should suppose it most Dens, and Firm or Consistent, yet it must be Perfectly Globous; becaus that is the Proper and only Perfect Figure of Union, to which this most Natural Motion to Union of the Matter must reduce it: and as it would reduce the Bladder or Glass, or any other most Consistent Bodys to Perfect Union Inwardly if the Air could be wholly Exucted, and no other Body within it; so it would also Outwardly, to a most Perfect Globular Figure, if there were no Body without it; becaus God hath Created in it a Principle of most Perfect Union which is Globular. Now as all Sens doth militate against Vacuity, so I know no Sensible Experiment which hath ever yet been offered to prove it, but such as when Vacuists themselvs have farther consydered it, they have at last found therein some Plenitude, which they did not discern at first: and I very much wonder how ever any man first fanstied such a Vacuity other then as a Notion of such a particular Notfinite, or Negation of any Extension, whenas Mankind hath never yet so Imagined any of the rest, as any such Nullity in Number; or Nontime; either Coacervate, which is as if an History should thus begin, In the 6954<sup>th</sup> year before the Beginning of the World: or Interspersed; which is as if we should affirm some Nontime or Nonday between Sunday and Monday, or the like. Having thus Consydered Matter as it is in itself, with the Corporeal Quantity or Extension, and other Accidents or Affections therof, whereby only we can know it, as we may Spirits by their Spiritual Qualitys; let us now so Review it simply as it is in itself, with all the Accidents or Affections therof, and severally and distinctly from any Spirit or Spiritual Quality what-



soever, wherof I shall discourse hereafter, and see if we can make of itself alone, or with all its own *Apparatus*, any such Spirit or Spiritual Quality, as some would Produce out of it, and the Atoms or Corpuscles therof: whereas it is in itself only one Universal Homogeneous and most Intire Body, which though it hath Aggregate Atoms and Corpuscles in its own whole, Mathematically, yet there are indeed no such Segregate Atoms or Corpuscles therof Physically as they do Imagin, nor can any such Possibly be without Intervening Vacuity, which we have sufficiently disproved. And therefore the Antient Atomists did also hold Vacuity, and so their Doctrine, though most fals, yet was more Consistent in itself, then the other of our Modern Corpuscularians, who affirm Segregate Corpuscles of Matter, and yet no Vacuity, but other Matter Intervening, which is a plain Contradiction or Matter Segregate, and not Segregate: and that Segregation therof which they pretend is only the Discontinuity of the Bodys of several *Composita* by their Individual Spirits, which are Heterogeneous, and not by the Matter, which is one Homogeneous and Continuous Body in itself, as I have said; and even Heterogeneous *Composita*, which are Spiritually Discontinuous, are yet Materially as Continuous, as Homogeneous: And so polished Metall and Marble, Drops of Water and Glass, Brick and Mortar, cannot be Divelled or Discontinued, unles Air or other Matter may Succeed to prevent Vacuity, and supply the Continuity of the whole Body of Matter and Extension therof; which is Absolutely Necessary: and the Spiritual Continuity of any *Compositum*, which is Generable and Corruptible, is only Respectively Requisite for the preservation therof, and whereby it doth Continue its own Body, as much, and as long as it can, and defend itself from other Ambient Bodys, which do Besiege and Assault the Spiritual Qualities therof, with their Heterogeneous Spiritual Qualities; and by the Menstruous Power therof enter and Corrupt it if they can: whereas if there be any Discontinuity in the Matter of the Bodily *Compositum*, the next Ambient Bodys, whatsoever they be, do and must Immediately Succeed to Complete the Great Body of Matter, which can suffer no Discontinuity, as I have shewed. And yet we will afford them such Materials as they would have, that is, supposed Segregate Atoms or Corpuscles, and then let them Compose and Confabricate them as they please into any Body, having  
Longitude,

Longitude, Latitude, and Profundity ; that is, Corporeal Extension ; yet certainly this will be only Matter so Extended, and no other thing whatsoever, either *Æther*, or Air, or Water, or Earth, or Tree, or Brute, or Man, or Angel. And this Extension of the Matter itself will only, as I have said, be Orbicular, for though all other Figures be in Extension Potentially, yet any Variation from this most Homogeneous Figure of Union is by the Heterogeneity of Spirits, and the Plastike Virtue therof, which as the Architect or Statuary doth superinduce them, by Varying that one Universal Figure of the Matter. And yet we will also allow them, without any Spirits or Spiritual Qualities, to Mold the Matter into what Figure they please ; which will be none other then Matter so Figured and Effigiated, and only as so many Statues of Elements, Vegetatives, Sensitives, and Intelligentes, but not the Things themselves. Also though all Matter be Equident in itself, and consequently Equigrave, and the Variations therof only superinduced in it by the Spirits, and are therefore by some termed Qualities, yet we will allow them to Densify or Rarify, Gravitate, or Levitate, those Statues as they pleas ; which will be made thereby no other then they were before ; but only more Dens, or Rare, Grave, or Light. And lastly, though all Matter doth Naturally affect Rest, and all the Natural Motion therof is only to Rest, as I have shewed, when it is at any time Violently Removed and Dislocated by Spirits or Disturbed by their Spiritual Operations ; yet we will also allow them all the Motions of Matter, that is only Local Motions ; and then let them either Move their whole Statues or any Parts, Corpuscles, or Atoms therof, this way, or that way, or every way, as they please ; and make them as Automatous as they can suppose them to be Moved by or with any such Local Motions : yet as the whole Statues Moving Upward, or Downward, Progressively or Circularly, and the like, will only be Statues ; so every one of their Parts, Corpuscles, or Atoms, so Moving therein, will be only such Parts, Corpuscles, or Atoms therof, as they were before ; and so consequently the Whole also the same as it was before ; only with such Variations of the Local Motion of the Matter or Parts therof, and of other Affections of the Matter, as of Gravity Levity Density and Rarity producing those Various Motions, or of Figure and Extension produced thereby, but



still the Statues will be only Matter, having such or such Extension, Figure, Density, Rarity, Gravity, Motion, or Rest, and the like Affections of Matter: which are Formally in themselves and all together only such as they are, and render the Matter only such or such a Statue: but can induce no Spirits and Spiritual Qualities; Heat, Cold, Moisture, Drines, Vegetation, Sensation, and Intellection; which, as I have said, are formally in themselves other things farr Different from Matter, and any or all the Affections therof: and so I shall more particularly prove them to be in my following Discourses: though I have already acknowledged, that as Matter is the Body of Spirits, so all the Affections therof are the instruments of Spiritual Qualities and their Operations, and so as I have said before (though now I have admitted it to be otherwise only by way of Supposition) they are superinduced in the Matter by the Spirit, to make it a fit House and Work house for itself, and then they both dwell and Work therein; and so Spirits are Instrumental to Matter, and Matter to Spirits. But yet as when I see a Ship sailing upon the Sea, and steering her Course according to the Art of Navigation, with her Sails spread, Tackling, and Rudder, and the rest of her Furniture rightly Instructed and Governed, I may not therefore conceive that she can thus perform the Voyage of herself, and by all these Instrumentalities, but that as she was first thus rigged and fitted by men, so she hath still men aboard who thus guide her, though I may not see them upon the Deck; So when I Contemplate the Active Operations of the several *Composita*, I know that the Rude and Common Matter could never so *Effigiate* and Diversify itself, but that the Spirits did so Prepare it for themselves, and that they still do Act it and Operate in it. Also I acknowledge, that therefore there is not only some Correspondence and Analogy between all Created Nature as it is one Universe and Republicke; but more or less between all the several Creatures, as I have observed, to be between all Quantities: and so there is also between all the Affections of Matter among themselves, and likewise between Matter, and the Affections therof, and Spirits, and their Spiritual Qualities, which are all contained within the same Extension of the whole Body of Matter, and the several Figures therof are the Hieroglyphical Images of the Various Spirits, and may have some kind of Signature therof: and so Condensation is

Analogous

Analogous to Intension, and Rarity to Remission of Qualities, and *Pondus* to *Potentia*, and the rest; but especially Motion is Analogous to the very Activity of Spirits; and yet as Matter and Spirit, so all Material and Spiritual Accidents are Generically Different, and particularly Local Motion from the Active and Generative or Corruptive Motion of Elementary Spirits; and much more from Vegetation, Sensation, and Intellection, which are Motions of a far other Nature, as I shall shew heerafter. Again, as Matter and Material Accidents are not, nor can not be Formally the very Spirits, and Spiritual Qualities, so neither are they Potentialy as others have supposed, and so would Educe them all out of I know not what *Potentia Materia*, and some Christian Philosophers in compliance therewith have supposed the first *Chaos* to be only such a *Materia Prima*; though God saith expressly that in the very Beginning he Created Heaven and Earth, Comprehending Superæther and all the fower Elements, as I have said; and that the Matter had not only, as a *Materia Prima*, the first and common Affections therof, that is, one Extension, one Orbicular Figure, Equidensity, and Equigravity, and the like, but particular Diversifications, and Variations of Spheres, of several Figures, Densities, and Gravities, and the like: and the Superæther then probably was Created Perfect, and adorned with all the Furniture therof, whatsoever it is: and the Elements were Created in such a manner as did Denominate them Æthereal, and Aereal Heavens, Earth, and Water, (yea the very Heavens and the very Earth, as some have Critically observed) though Inform, and Inane, and without Motion, which is Secondary and Subordinate to Rest, and wherof there was no Need nor Use before Generation and Corruption were Ordained afterward in the Six Days. Of all which I shall now proceed to discourse.

## SECTION VI.



## SECTION VI.

And the Spirit of God Moved upon the  
face of the Waters.

## EXPLICATION.

The Spirit of God, Moving in the *Chaos*, by Supernatural Incubation did Prepare and Predispose it for the Producing and Perfecting all things, (that were before Created in it) afterward in the Six Days.

## ILLUSTRATION.

1. Of the Incubation of the Divine Spirit. 2. Of Actuality and Potentiality. 3. Of Generation and Corruption. 4. Of the Process thereof. 5. Of the Scale of Nature. 6. Of the Oeconomy thereof.

I. **G**Od, who in the Begining, or very first Instant, Created Heaven and Earth, could also have Perfected them, and all Creatures therein, in the very same Instant; as most probably he did so Perfect the Superæther, and Angelical Nature, which are the highest Sphere, and highest Nature, for the manifestation of his Infinite Power; yet also to manifest his Infinite Liberty and Absolute Sovereignty over Created Being, and the Subordination and Subjection thereof to himself; and how the Creatures, as they could not Cause themselves to Be from Notbeing, so also after they had a Being, could not of themselves Perfect themselves, nor attain any farther Degree of Welbeing without him and his Creating Causality, did first let this Elementary World ly in the *Chaos* thereof, and afterward, in such a Space of Time as seemed fit to his Divine Wisdom, that is, in Six several Days, proceed Gradually and Orderly to Perfect them. And though the first

first Creation, which was from Absolute Notbeing to Being, must therefore have been in an Instant; because there is only one Affirmative Term thereof, that is, Being; which must necessarily be in the same Instant as soon as it was; yet all these Works of the Six Days which were Productions from Potentiality to Actuality, or Original Generations from not such a Being to such a Being (which are several Affirmative Terms of Being, and the first only Negative of such a Being, which yet implies Being) was Gradually in Time, according to Natural Generation, and the Process and Course thereof, which was then Instituted, as I shall shew hereafter. And this Original Generation was another Improper Creation, and Perfection of the Primitive and Proper Creation; and such as could not be performed by Nature, until the Natural Course thereof was sett in Order by the Divine Spirit: who, before it was so Produced, and until it was Perfected, did from the Beginning Effectively Move, or Incubate in, or upon, the Created *Chaos*; (as it were hatching the Egg, or *Embryo*, thereof) in the midst of all the Elements: that is, upon, or above, the Face of the Waters, and Earth beneath them; and under the Aereal, and Æthereal Heavens: Preparing and Predisposing them for the Production of all their *Apparatus*, and Inhabitants, out of their first Created Potentiality Latent in the first *Chaos*, into their Actualities in the Six Days: And all those Productions were also the Immediate Works of the same Divine Power, as it is said, *God said Let there be Light*; and so of the rest; which were not the same Creations with the first, for that had been Vain and Superfluous; nor in the same manner, for that was in the Beginning, or first Instant; but these in Six several Days, Gradually, and Orderly, according to the Natural Process of Generation which was then first Instituted, as I have said: and wherein, as all their Primitive Entities were first Created in the *Chaos*, and then Prepared and Predisposed by the Divine Spirit; so every Production in every one of the Six Days was Previous and Preparatory in Nature to and for the Succeeding Productions, as I also shall shew hereafter. And Angels, probably being Created Perfect in and with their Superæther in the Beginning (though they might be Spectators) yet neither did Operate, nor Assist, in this Improper Creation; which though Improper in respect of the former, yet is only Proper to God himself, who is expressly said so to Create in all the Six Days, as well as in the Beginning



gining. But I presume rather, that as God made all things for himself, and the manifestation of his own Glory to his Intellectual Creatures, Angels, and Men, so Angels were Created in the Beginning, in and with their Native Region of the Highest Heaven, that they, who can Intuitively behold all things, and needed no Created Light to Inspect the Dark *Chaos* (and so I suppose, the whole World and Frame of Nature is Transparent to them) might Contemplate all the Works of God in the Improper Creations of the Inferior Elementary World; which was to be the Region of Man, as he, who is the other Intelligence, was made last, to Review (as God himself afterward did) all the Works which he had made, and to celebrate that Sabbath of Rest which God Instituted, and as it is said, made for him. And as the Divine Spirit was the only Creator, and Angelical Spirits no Subcreators; so much less was there, or is there, any such *Archæus Faber*, or *Plastes*, *Demiurgus*, or *Demogorgon*, or I know not what Fictitious Operators, which some have substituted. And though there be, as I have said, one Universal Body of Matter, or *Corpus Mundi*; yet there is not therefore one Universal Spirit, or *Anima Mundi*, as others have fancied: for then all had been Perfected in the Beginning, both the whole Body, and Spirit of the World; and all Natural Generation and Corruption had commenced from thence, and should so have continued; and there had needed no such farther several Creations in the Six several Days, for setting in Order the several Courses thereof; from which they did Originally commence, and so have continued: Whereas though the Matter be one Homogeneous Body, yet the Spirits are many and several, and their Spiritual Qualities Contrary one unto another, which cannot proceed from one and the same Principle; but plainly discover several Spiritual Principles thereof: as I have shewed. And though they are United together in one *Compositum*, as in a Beast, or the like; yet they remain several Spirits in their own Natures, as they were before, Elementary, Vegetative, and Sensitive Spirits; and were not, nor are not, made one Universal Spirit of that one *Compositum*; much less is there any such Universal Spirit of all the several *Composita* in the whole Body of the World. And more apparently in Man, besides all these, there is also an Intellectual Spirit, which is farr different from all, or any of these. So that Physically there is no such Universal Spirit, which is only one in Nature,

as Matter is one, whereby the whole Body and Spirit of the World should be one *Individuum*, but only Metaphysically, and Generically, as there is one Univers, and as Spirit is another Active Principle, or Substantial Activity, and so common to all Spirits, (though Specifically Heterogeneous in themselves) wherein they all agree, and which doth Subsist in them all, as a Real Relation of all their Substances so agreeing and Relating, which yet are so Heterogeneous and several in themselves; but not as any Total Substance in itself, like Matter, and wherof they are all only so many Parts, like the Particular Bodys of Matter. Neither is there any such *Potentia Materia* which may be the Universal Principle of all Spirits; nor are they only Diversifications of the Matter, or of any, or all the Affections therof, as I have shewed. And there are Immaterial Spirits of Angels, and Men, Separate, or Separable, from the Matter (otherwise, then as they are in the *Ubi* of the Universal Body therof, which is only a Locality, or Local Circumstance, and not the Formality of their Spiritual Nature) and so neither is Consubstantiation of the Matter the Formality of Spirits, which we therefore call Material, (as we call some *Animals* Corporeal) and might as well for the same Reason call their Bodys of Matter Spiritual as it is said *There is a Spiritual Body*, and yet even these are Spirits Generically as well as Angels, though they are Farr Inferior to them Specifically; becaus Spirits are Specifically Heterogeneous, and may thus differ; though Matter be Homogeneous, and only one and the same. Nor indeed is there or can there be any such *Potentia*, either of Matter, or Spirits, whereby they may Produce any Substance; which is never Potential, but always Actual: because it alway Subsisteth in itself, and therefore cannot be Produced out of Potentiality into Actuality; (but only by Mition or Union in a Substantial *Compositum*) not like Accidents, which may be Potential; becaus they can Subsist in their Substances, when they are not Actually in themselves, nor are they like the Substantial *Composita*, which are Potentially in their several Substantial Principles, wherein they Subsist, and Actuated by their Composition. And so in the Consubstantiation of Matter and Spirit, the Matter doth no more Produce the Spirit, then the Spirit doth the Matter; as also in Accidental Composition of several Accidents, one Accident doth not Produce the Essence of another. Thus the true *Potentia* of



the Matter is only the Power of Producing its Proper Accidents, or Affections, out of its own Substance; as Spirits also do theirs out of their own Substances: And yet though the General Accidents, or Affections, of Matter be Produced out of itself, the Particular Diversifications thereof Instrumentally are Superinduced by the Spirits, as I have shewed: whereas an Immaterial Spirit, as an Angel, Produceth his own Accidents, or Affections, not only out of his Substance but by it alone, and without any Matter; And Matter, which is otherwise more rightly said to be Receptive of all Spirits Extrinsically, is not therefore Productive of them Intrinsically. Nor indeed could both Matter and Spirits Produce either themselves, or one another, or their own Accidents or Affections, or any Thing whatsoever, Properly without a Proper Creation, nor Improperly out of their *Chaos* of Potentiality, without an Improper Creation; nor do any Substances now Produce any Accidents, or Substantial or Accidental *Composita* Naturally, or by Natural Generation and Corruption, otherwise then by the Successive Power and Virtue of the first Institution thereof, and Divine Benediction by the Spirit of God; who so Created them, both by a Proper and Improper Creation, as I have shewed; whereby the Course of Nature, and of all Natural Generation and Corruption, doth continue accordingly. But this Original Generation, which was a Secondary and Improper Creation, did commence from the First and Proper Creation, by the Supernatural Preparation and Predisposition of the *Chaos* by the Divine Spirit: and as it was not Immediately from Nonentity, so neither from Corruption; because there was yet no such Generated *Compositum* which might be Corrupted; but there were only the Simple Essences of Substances and Accidents Created in the Beginning in the *Chaos* of their Potentiality, and Produced into Actuality afterward, whereas Natural Generation doth alway commence from Corruption of some former *Compositum*; which if it should still remain as it was before Generated, there could not be any new Generation of another; and therefore it doth necessarily require and presuppose such a Corruption thereof.

II. Thus the *Potentia* of Matter, or Spirits, is only the Power of Educing something Subsisting in themselves, and apt to proceed and flow from them, out of Potentiality into Actuality; as I have  
often

often said, and shall now prove, when I have first explained my Terms. By Actuality I suppose we easily understand the Extrinsical Existence of any Essence; wherefore there must also be an Intrinsical Essence, or Entity, whereof that is the Existence, and which without that Actual Existence doth not Actually Exist, and when it doth so Actually Exist, is therefore said to be in Actuality; and when it doth not, in Potentiality; because it is an Essence or Entity in itself whether it doth also Exist, or not Exist: which Essence, or Entity, while it doth not Actually Exist, doth always Subsist in some others; and therefore always is Essentially, though not Existentially. And when the Essence is Produced out of that Potentiality into the Actuality, then there is a Generation thereof; and when again that Actuality is Reduced into the Potentiality, then there is a Corruption thereof. But Simple Substances which subsist in themselves, therefore always are Actually in themselves; and are Ingenerable, and Incorruptible: Thus in the Beginning there was not only the Matter, nor only the Spirit of the Superæther, Actually Subsisting, but also of Æther, Air, Water, and Earth; which did so Denominate those first Elementary *Composita* of the Matter and their several Spirits, the Heavens, and the Earth, as I have shewed. And so there were also in them, and with them, all the Substantial Simple Vegetative, and Sensitive Spirits, Subsisting Actually in themselves; though there were yet no such Mixture *Composita* of the Elements themselves as afterward which might Denominate them Stone, Metall, and the like; nor any Composition of the Elementary Spirits with the Vegetative, or of Elementary and Vegetative with Sensitive, which might so Denominate them Trees, Beasts, and the like; untill such *Composita* were Produced in the Six Days afterward. And so also there were all the Intrinsical Created Essences, or Entitys, of Simple Accidents, as well as Substances, which were also Created together in the Beginning, in and with their Substances, though only the Universal Accidents of Matter, Extension, Orbicular Figure, Density, Rest, and the like, did then Actually and Extrinsically Exist in the Matter; and there were yet none of those Particular Variations thereof, which were afterward superinduced by the Spiritual Qualitys of Spirits; because those Spiritual Accidents did not yet Exist themselves: and so not only Substantial *Composita*, but also such Simple Accidents were in their *Chaos* of Potentiality. As there was no Actual

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Light,



Light, but Darknes; and so of the rest: but yet the Intrinsic Essence or Entity of Light, and the Rest, was in the *Chaos* Potentially; which is therefore termed Inform, and Inane, because they were not yet in it Actually and Extrinsically, but were afterward so Produced in the Six Days. And all the Previous and Requisite Principles, Substantial, or Accidental, wherein any of their Produced *Composita* did Sublist Mediatly, or Immediatly, were first Produced themselves; without which the other could not have been Produced: as Mist Elements before Vegetative *Composita*, and Vegetatives before Sensitive *Composita*. And so doth the Natural Generation and Corruption, both Substantial, and Accidental, still continue; as doth plainly appear by all Generative Mition and Composition, and production thereby of the *Composita*, which are so Confabricated Naturally, as well as Artificially. As a House is Potentially in all the Materials before it be built, and every particular Figure in the Extension of the Materials before it is framed: and when it is so Prepared and Erected it may be said to be Artificially Generated; and when it is Demolished to be Corrupted; the Materials, like Substances, still remaining the same, and the whole *Compositum*, and every Figure thereof, being first Potentially and afterward Actually therein; and so again Reduced from Actuality to Potentiality by Demolition: and there is no other Difference heerein between them, but only that Natural Generation and Corruption are Intrinsic Consubstantiations or Compositions of Proper Principles of Nature, which are both the Materials and Architect thereof, and Artificial Generation and Corruption are Extrinsic; which only can be, by Application and Apposition of the Intrinsic Principles of Nature, so applied and conjoined by the Architecture of Art. And as all these Mitions, Compositions, Figures, and Virtues, which were afterward Produced in the Six Days, were Potentially in this first General *Chaos*; so every thing now in the Course of any Generation, or Corruption, while it is in Potentiality, is so far forth in the Particular *Chaos* thereof; and when it is Actuated, is Produced out of it: and there is no other difference heerein between them, but that the first Production was by the Supernatural Power of the Divine Spirit, and the others by the Power of Instituted Nature, or Application of Art: so that this Potentiality is not Relative to Essence, or Entity; as if it were only a Possi-

Possibility of something, which yet hath no Essence, or Entity, in any manner whatsoever; but only to Actuality of the Essence, or Entity, thereof, which is not yet in such a manner as Potentially it may be, not only by Divine Power, which may Create it Properly, or Improperly, but according to the ordinary Course of Nature, or Art, which may so Generate it Naturally, or Artificially. And so the Existence itself or this Really Different manner of Being is an Entity, Potentially in the Essence before it Exists, and Actually when it doth Actually Exist. And whatsoever is not so Actually Existent must necessarily Be before in the Essence thereof Potentially; otherwise it could never be Produced, or made Actually to Exist by any Power of Nature, or Art. And these Essences, or Entitys, which are yet in their *Chaos* of Potentiality, do then Actually Exist, when, as I may so say, they come forth upon the Stage of Nature, and there Appear, and Act, or might so Appear, and would so Act, if there were no Violent Impediment; as Accidents, which are the Emissarys and Instruments of Spirits, do Exist, when they are Actually so Emitted and Instructed, and consequently Actuated, whereby the Spirits of Sensible *Composita* do Immediately Act or Operate upon our Senses, or Sensitive Facultys; which are also Accidents, and thereby Mediately upon our Substantial Spirits: and yet there may be such a Violent Impediment whereby like Substantial Spirits which always Exist, though sometimes Latent, they may not so Appear, and Act, unto, or upon us, though they Exist Actually in themselves; as a Picture under a Curtain, or the like. And so there may be also an Erupturient Endeavour, which we call *Nisus*, when they can not Appear, and Act, as otherwise they might, and would, by reason of some more immediate Obstruction (like Retention by any Spontaneous Power with some Strife and Difficulty) which plainly shews them to be so far Actual; because there is no Actual Contention of or between any Accidents, while they are in Potentiality, though their Essential Natures be most Contrary one to another. And I conceive that all Mixture, and Contemperature, of Contrary Qualitys, is first begun, while they are in the *Chaos* of their several Potentialitys; as they were so Prepared and Predisposed by the Divine Spirit in the Universal *Chaos*, as I have before shewed, and then there being no Actual Contrariety between them, they are easily Melted at first, and so by Degrees, are more and more Actually



aly Mist, as their Contrary Essences are more and more Actuated and Produced into Existence by a mutual Contemperation, and Gradual Process thereof. Thus I have more largely explained what I intend by Actuality and Potentiality; because the right Understanding thereof is, as I conceive, and shall shew hereafter, the Fundamental Knowledge of the whole Doctrine of Generation and Corruption. And now I shall proceed to prove it accordingly: It is said of the first *Chaos*, that it was Inform, and and Inane, without any of those Actual Mitions, Compositions, Figures, and Virtues which were afterward Produced in the Six Days; wherof all the Essence or Entity was Created in the Beginning; and which to Produce were the several Works thereof: but there were all the Simple Essences and Entitys thereof Potentially in that *Chaos*, otherwise they had not been Created in the Beginning, nor had it been such a *Chaos* thereof, Inform, and Inane, in respect of those Essences, which it had in itself Potentially, and ought to have Actually also Existent, but yet had not, and which were afterward Produced into their several Actualities, and Existences, in the Six Days; wherein there was no Proper Creation of any new Essence or Entity (but only of the Spirit of Man as I shall shew afterward) and the Improper Creations therein were only the Productions of these Potentialitys into their Actualitys by the supernatural Power of the Divine Spirit, which was the Original Institution of Natural Generation and Corruption, as I have often inculcated, and shall now declare by a more particular Enumeration. Thus in the first Day Light was Produced out of *Æther* (wherin it was Potentially before) by the Mition thereof, into Actuality; and there was no new Creation of the Essence or Entity thereof: and therefore it is said, *Sit, or Existat Lux*; as it is also said elsewhere, *God who commanded the Light to shine out of Darknes*, or to be Produced out of the Dark *Æther*, like *Fumus Accensus*: and so probably Heat, and other *Æthereal* Qualitys, were then Produced. Also in the Second Day Vapors, which were no new Created Substances, or Essences, but only Water Rarified, did Ascend out of the Water into the Air; and the Qualitys of the Air, or *Expansum*, were Probably then Produced by the Mition thereof. And in the Third Day the Waters and Earth were Distributed, and Disposed, and Drines, Moisture, and Probably the other Qualitys thereof Produced by  
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the Mitions therof. And in the Fourth Day the Sun and Moon and Starrs were made of the *Æthereal Substance*, and so probably all the *Qualitys* therof Produced. And in the Fifth Day the Water is said to bring forth or Produce Fishes; and so also Fowls were Produced accordingly. And in the Sixth Day the Earth is said to Produce Beasts, which could not be so Produced in their *Composita*, unles they were there before in all their Simple *Essences*, or *Entitys*, which were all Created in the Begining. And in these Six Days there were both Compositions and Mitions, or *Forme Mistorum*, and also Simple Substantial Spirits which were before Created in the Begining were then Produced, as is expressly Interpreted afterward of themall, and their Improper Creation or Making, that he *Rested from all his Works which God Created, and made*; or *Originaly, Created to Make*, that is, Created in the Begining to Make or Perfect afterward in the Six Days. And the Apostle like a Divine Philosopher doth also so Interpret it, *Through Faith we understand that the Worlds were framed by the Word of God*; so that things which are seen were not made of things which do Appear: that is, the *Secula* or Generations were so Framed and Ordered by God in the First Institution therof, that in all Successive Generations nothing should be made of any former *Phænomena*, or things which do Appear, by any Transpeciation or Conversion therof into other *Essences* or *Entitys*, but of their own *Essences* or *Entitys*, which he Immediately Created in the Begining, and in their first *Chaos* of Potentiality, wherein they then were not any such Actual *Phænomena*, or Appearances, but were made to be such afterward, and so still continue to be Generated out of their Potentiality into Actuality. Which as every Christian understandeth by Faith, according to this Divine History of the Creation, and first *Chaos*; so also any Heathen, who wisely consydereth the same Courf of Successive Generation and Corruption, must acknowledg to be according to Natural Reason, and Sens. And as the first Universal *Chaos*, so every Particular Successive *Chaos*, is Hebraicaly called Gods Treasury, or Storehouf, out of which he Produceth or bringeth forth all things Generable, or Corruptible, Expending and Employing them in their Appearances and Operations, which is their Actual Use and Office: and so we read of his Treasures of Rain, Snow, Hail, Wind, and the like. And the Author of *Esdra*s saith particularly of the Light, which was first so Produced: *Then*



commandedst thou a fair Light to come forth of thy Treasures, that thy Work might Appear; that is, to Exist Actually, which before was Latent in the Chaos of Potentiality. And certainly no Successive Generation in the Present Courſ of Nature can be a greater Work then thoſe Primitive Generations, which were the Immediate Works of God, and Improper Creations. Whereas if Natural Generation ſhould be any other then the Production of Created Eſſences into their Actual Exiſtences, or Corruption then ſuch Reduction therof, they ſhould be Proper Creation and Annihilation: For if any new Eſſence or Entity whatſoever, which was not before, ſhould be Caused to Be by Generation, then it muſt be Properly Created; and if that which was before be Caused Not to be by Corruption, then it muſt be Properly Annihilated. Nor doth it ſuffice to ſay, that Generation or Corruption are not of any Simple Subſtances, either Matter, or Spirits, but only of *Compoſita*, and Accidents, or Modes, or whatſoever they pleaſe to call them; for whatſoever they are, or howſoever Exile, or Deſultory their Nature may be, yet they are Real, and Entitative Somethings, not only in our Reason, but in Nature, as I have ſhewed: and indeed otherwiſe Generation and Corruption ſhould be no Real Alterations; but the things Generated or Corrupted ſhould be Really the ſame as they were before; and ſo we ſhould deny all Generation and Corruption: whereas they Really are, and do Produce Real Alterations, or ſome new thing Actually, which was before only Pontentialy; as every *Compoſitum*, whether Subſtantial, as any Elementary Subſtance by Miſtion of the ſower Elements, or Accidental, as Green by Miſtion of Blew and Yellow, and the like. Alſo this doth Senſibly appear in and by all Generations and Corruptions whatſoever: as of all Subſtantial *Compoſita*, wherof there is only ſuch a Compoſition; otherwiſe they ſhould not be *Compoſita*: and certainly the Simple Subſtances were before Actually Subſiſting in themſelves, otherwiſe they ſhould not be Subſtances; and ſo likewiſe were the Simple Eſſences of Accidental *Compoſita*; as of Green, wherof certainly the Blew and Yellow were before Actually Exiſtent, and the Green Pontentialy in both. And ſo of more Simple Accidents Produced out of their Pontentiality into their Actuality: Whether of the Matter, as this or that Particular Extension, Figure, Density, and the reſt; which are Produced Actually, yet were before

before Potentiality in Universal Extension, Figure, Density, and the rest; otherwise they could not be so Produced; nor can they be Produced into more Actuality than they were before Potentiality. Or of the Spirits; as Light, and Heat, Produced out of *Calx viva*, Thunderclouds, Haystacks, Firecanes, or any other Inflammable Bodys whatsoever, were before in the Substantial Fire thereof Potentiality; otherwise they could not be so Produced; nor can they be Produced into more Actuality than they were before Potentiality. And so we commonly say of Spices, Wines, and the like; that they are Cold Actually, but Hot Potentially. And so Vegetatives Produce many Qualities Actually in Summer, which were Potentially Latent in them in Winter: and Sensitives such in their more Adult State, which were Potentially in them while they were Embryons. And this is the very Natural Course of Generation and Corruption, and of all the mutual Reciprocations thereof; whereby *Generatio unius est Corruptio alterius*, and *Corruptio unius est Generatio alterius*; which is the *Rota*, or Figline Wheel of Nature, turning about in the perpetual Revolutions and Conversions thereof by such Production and Reduction, as I have before declared. Between which two doth always intercede Privation; as it was Antecedent in the first *Chaos*, which being Inform, and Inane, was the Universal Privation of all those Actual Existences which were afterward Produced in the Six Days; for so Existence is capable of Privation, but Essence only of Negation. But Privation is not any such Positive Principle in Generation or Corruption as Matter and Spirit, which are the Simple Substances whereby the *Compositum* is Consubstantiated, because it is only Privative: nor as the Essences of Accidents in their Potentiality, which are Positive Entitys; but only the very Potentiality thereof; which as it Relates to Actuality, is called Potentiality, and as it Relates to Existence, Privation. Thus both Matter, and Spirit, or Form, and also Privation, are all Comprehended in the *Chaos*. And from this Dark *Chaos* of Potentiality by the Revelation of the same Divine Spirit, (which first Moved in it, and brought forth Light out of Darknes) we may discover the *Magnum Arcanum*, or Grand Secret, of Natural Generation and Corruption; and plainly perceive how all the *Phaenomena* were therein no such *Phaenomena* as since they are, but first Created Potentially, and then Produced into their Actualities, and Appearances, Originally in the Six Days, and



since Successively in all the *Secula* therof. Whereas all Human Philosophy, being ignorant heerof, hath groped in the Darknes of several Imaginary Notions, which the several Seats therof have Invented to themselves, and so in stead of this *Chaos* and Creation have supposed an Eternity, and Selfsufficiency of Matter, and the *Potentia* therof, or Matter and Motion, Equivocal Generations, Transpeciations, and the like; and though *Anaxagoras* in his *Homœomeria* hath approached somewhat neerer to the Truth, yet his Conception therof is very gross and rude, and like the rest, supposeth that also to have been Eternal. And now, though I have so largely explained and fully proved this Doctrine of Natural Generation and Corruption; yet becaus I conceiv it to be so Fundamental, and therefore very requisite that we should most clearly and familiarly understand it, and discern this Divine Light; and that I may produce it out of the dark Crepuscula and Confused Notions of the antient Philosophers, who have partly acknowledged it in their Potentialitys, Eminences, and *Homœomeria*, and the like; and again obscured it with the denial of a Creation; I shall now summ up together the Effect of all I have said before. That God in the Begining Created all Essences of any Generable and Corruptible things either in their Actualitys, or Potentialitys, and all the Real Modalities therof whatsoever whereby they were made Generable and Corruptible, and indeed every thing of them or in them that is Entitative in any kind or maner whatsoever; that is, all the Simple Substances of Matter and Spirits; Elementary, Vegetative, and Sensitive, which Subsist in themselves, in their own Actualitys, which therefore in themselves are Ingenerable and Incorruptible. But whereas they of the same *Classis* may be Mist together, when they are so Mist, they all become one *Mistum*, which is the Thing Generated, and Realy is another Something Different from them; but Actually Subsisting in them, which therefore was before Potentialy in them; that is, in their Power to Produce it, and in its own Potentiality to be Produced out of them; and the Form therof is, that which I therefore call *Forma Misti*; as of Stones, Metalls, Mules, and the like: and if they be of several *Classes* which cannot be Mist, yet they may be Composited together; as indeed there is no *Mission* without some such Composition; for so the very Elementary *Mista* are Composited with the Matter, and Vegetatives with them,

them, and the like; and therefore the Form thereof may be more rightly termed *Forma Compositi*. And as this *Forma Mixti*, or *Compositi*, is thus Generable or Corruptible, because it doth Subsist in the Simple Substances, and so may be Produced out of them wherein it was Potentiality; and then it is Generated, and in its Actuality; or Reduced again from it into its Potentiality, and so Corrupted: so also Simple Accidents, which clearly were Created in and with their Simple Substances, as Extension, Figure, Density, Rest, and the like, in and with the Matter; because they also Subsist not in themselves, but in their Substances, they may be so Altered and Varied by Generation and Corruption, as to be Produced out of their Potentiality into Actuality, and Reduced from their Actuality to Potentiality again: thus Heat and Cold, and the like, do sometimes Actually Exist, and sometimes do not, but are in their Potentialities: and so also they may be Mixt or Composit, as *Tepor*, and the like: and all such Accidental Mixt or Composit Forms Subsist Immediately in one another, and all of them Mediatly or Immediately in their Substances. And this is that which I intend; wherein I can not conceive how any, who doth not deny a Creation, can differ in the Thing, but only about Terms; concerning which I must assign one Distinction, the want whereof I suppose hath much hindered the right understanding of the thing itself; that is, between this Potentiality, which we all mention generally, but more strictly is to be restrained only to things Generable and Corruptible, whose Simple Essences were before Created, as I have shewed, in their Potentialities; and Possibility, which may be also of any thing Creable or Annihilable: For though Possibility is not nor can not be Infinite, (because there can be no other Infinite besides God, who always Actually is; nor Notfinite, because there can be no other Notfinite besides Nonentity, which always Actually is not) yet it is Properly Indefinite, and as boundless as Infinite Omnipotence, which only can not Create another Infinite; and not such an Improperly Indefinite, as the Dust of the Earth, and the like, which I formerly mentioned. But it is to be distinguished from Potentiality, as that which hath no manner of being in Nature, neither Actually, nor yet Potentialy; for then it should not be only Possible, or Creable, which is yet in Notfinite Nonentity, and only may be Caused to Be by Infinite Entity or Divine Omnipotence; whereas whatso-



ever is in Natural Potentiality was Created in the Beginning, and may be Produced into Actuality by the Finite Power of Natural Generation. Wherefore I conclude, that whatsoever is in Natural Potentiality is Entitative, even while it is Potential: because otherwise Generation and Corruption should either be Creation and Annihilation, which is Impossible; or no Real Alterations, which is most fall. But Divine Philosophy, which is only true and satisfactory, doth lead us back from the present Course of Natural Generation and Corruption to the Original Institution thereof in the Six Days, and from thence to this first *Chaos* of Potentialitys, and from thence to the Creation, and so terminates in one Infinite Creator of all things Actual or Potential.

III. Thus Generation rightly understood is and must be always Univocal; that is, not only of the same Name, but also Unigenous, or of the very same Nature. But we must distinguish between the Generation itself, which I now Intend, whereby any thing is Formally Caused, or Intrinsically Generated in itself, and the Generator, or Extrinsic Efficient Cause, which indeed may be either Equivocal, as when an Horse and Ass beget a Mule, and the like; as well as it may also be Univocal in that respect, as when Horses beget an Horse, and Asses beget an Ass, and the like: Yet in both these the Generation itself is Univocal with itself; because it is, as I have shewed, only the Production of something out of its Essence into its Existence, which is most Unigenous; because the Existence Produced is only the Existence of the Essence thereof, which was Created by God with a Potentiality of Existence, and cannot be Annihilated by Generation, but is only Altered thereby, being so Produced into the Actuality of that which it was before Potentiality in itself; and so it is only its own Existence of its own Essence; then which nothing can be more Univocal, or Unigenous. But the Generator, only as an Extrinsic Agent or Efficient, doth collect and concoct the Seed, Preparing and Predisposing it for the Generation, and then deciding and casting it forth from it self, or containing it in itself, as some other thing besides itself, and its own Individuality, as it is said of Vegetatives, *Cujus Semen seipsum Seminnet*; and so a Beast doth contain the *Fetus* in its Womb, cherishing and fostering it as a Fowl doth an Egg Excluded; and a Fowl doth hatch Eggs by Incubation and the Heat of its own Body; as  
Eggs

Eggs of Fishes are cherished and fostered by the Heat of the Sun in the Water, or as Seeds of Vegetatives in the Earth; which are no more more then is performed by Egyptian Ovens, or Italian Capons: but the Seeds by their own Plactical Virtue and Power do Effigiate, Compose, and Generate, themselves Intrinsically, according to their own *Species*, and Individual Nature. And thus Horses and Asses Generate Mules Equivocally, no otherwise then Horses begett Horses, and Asses Asses Univocally, by an Extrinsical and Instrumental Causality, which is like the Spear that wounded the pregnant Sow in the *Spectaculum*, whereby she brought forth Pigs, and in some Generations, as of Sound, this Instrumentality is Necessary. Only Univocal Generators are more Proper, and more Natural and Efficacious, Efficient then Equivocal; and even some Equivocal Generators as they are more Homœogeneous are also more Instrumental then others; but always the Generation itself, or Production of the Essence into the Existence of the thing Generated, is most Univocal; and is not, nor can not be Equivocal by Transpeciation, or any Transmutation, or Conversion of one Essence into another, but only of the same Essence into Existence, for as it is most true, *Ex Nihilo Nihil fit*, by any such Conversion of Nothing into Something, which is Impossible, as I have shewed; so, *Nihil dat quod non habet*, is also as true and tantamount. And yet they who Deny the one can Affirm the other, with the Addition of Fictitious Eminences, and Transcendent *Potentia*, or Creations by the Finite Power of Natural Generation instead of the true *Chaos*, and Creation by the Infinite Power of a Divine Creator, who is indeed the only true Eminent Caus. Nor do any of their Instances prove any such Equivocal Generation in itself, but clearly disprove it. So when an Horse and Ass beget a Mule, that Generation is as Conformable to the Milt Seeds of both Parents, as when Horses beget Horses and Asses beget Asses. Only that Instance affordeth this farther discovery, that the Seed of the Female Horse doth Contribute to the Generation, as well as the Seed of the Male Ass; because the Mule is of a *Species* Milt of both. And the Burning Glass proves the Sun to be Actually Hot; which yet some deny, and so from one Falsity would prove another. But their most common Instance of Conversion of Water into Air, and so Reciprocally, is very fond; for the Water is not Converted into Air, but only Rarefied in itself, and then we call it Vapor; which



which Differs as much from Air, as Air doth from Æther or Æthereal Matter, as they term it, which I shall shew heerafter to be very Different.

IV. I shall now inquire generally into the Maner, Method, or Process of Natural Generation and Corruption, and how they are performed. All Generated Substances, or Substantial *Composita*, are as I have said, Compos'd of Matter and Spirits. Wherefore in their Substantial Generation there must first be Matter, and a requisite Body therof, which though it may be Rarefied, or Denfied, yet can not be Augmented, or Diminished, without a new Creation, or Annihilation; which is beyond the Finite Power of Natural Generation and Corruption. And as there must be such a Body of Matter, so also Spirit, and such Spirits Subordinate or Coordinate as are Requisite according to the Law of Nature, and of the particular *Compositum*. Also the Matter and the several Material Spirits must Consubstantiate one another, that is, Sensitive Vegetative and Vegetative Elementary and they the Matter being all Imperfect in themselves, which can not otherwise be Generated; but the Human Spirit being a Perfect Substance in itself, is only Composited; Also Coordinate Spirits of the same *Classis* may be Mixt together, as the Elements must always be so Mixt; which appears by the Mixture of their Qualities as in *Tepor* and the like: whereas Gravity, Heat, Plasticall Virtue, and the like are not so Mixt in Consubstantiation. And as in Original, so also in Successive Generation the Composition and Mixture must be such as doth Produce the requisite Accidents both of Matter, and Spirits into their Actualities: without which their Substances cannot Act, nor Appear to us, but are unto us, as if they were not, and as in their first *Chaos*, Useles, and Ineffectual. And this is carefully to be observed by Chymists, and Physicians, and all such Operators; that there be not only requisite Matter, and Spirits, Ingredient in their Compositions; but also such a fitt Mixture Internally, and such Instrumental Causalities Externally, as may Evoke and Actuate the Accidents or Affections therof, without which they will not Operate or Appear; and whereby their Operations and Appearances will be very strangely and suddenly Altered, as I have said of Wine, and Spices, which are Actually Cold to the Touch, but Hott to the Taste; and so some may be Cold to the Taste, which will afterward become Hott by farther

farther Concoction in the Stomack, and the like. Now this Union or Local Mixture of Matter and Spirits must not only be *per minima Corpuscula*, but *per omnia Puncta*, though Maceration and Comminution are indeed Degrees therof, and Preparatory to Mixture, and every *Compositum* being Macerated and Comminuted is thereby Prepared for Corruption, and so for a new Generation; according to that general Maxim in Nature, that Union doth fortify, and Disunion weaken; not only Proportionably, according to the respective Parts, but in the Whole. And so the more the Maceration and Comminution is into less and less Particles, the more Preparation is there for a new Generation, which is by Perfect Mixture, or Adunation, and not by Aggregation only; because without such Adunation there is no Generative Composition, nor indeed any Mixture, but a Local Separation, and consequently no *Compositum* Generated, either Substantial, (for so a Mule must be Perfectly Mixt and Composed of an Equine and Asinine Substance, otherwise it should consist of Indefinite Equine and Asinine Particles, which should not be a Perfect Mule, but a greater Monster then any Poetical Hippocentaur, or Hircocerv, (which is only half of one Kind, and half of another) or Accidental, as of Contrary Qualities, Heat, and Cold, and the like, wherof there can be no Contemperature without such a Mixture; for such Qualities are not like Passive Affections of Matter having only Degrees in themselves, as Density, and Rarity, Gravity, and Levity, and the like, but being also Active in their own Nature would Naturally Act to the utmost, and be most Intense in themselves, if they were not either Violently Obstructed by some Contrariety or Impediments, which by their *Nisus* they also endeavor to overcome and break through, or Contempered by a Natural Mixture of their Contrary Qualities *per omnia* in and by the Primitive Generation therof out of their Potentiality into Actuality by Degrees; and which is their Natural Remission. For their Temperature must be by a Perfect Union of both whereby neither hath any Advantage over or against the other, by being in the least Disunited, or having any private Sphere of Activity in itself, for then it fights against the other to the utmost, as Fire and Water, and the like: which if it were so in their Composition there should never be any Natural and Continuing Contemperature thereby, but the most Tem-



perate Flesh should have only so many several Pricks, or Needles; of Intense Heat, and Intense Cold, which would be rather a double Torture, then any gratefull Temperature. And so *Lucetius* his Meadow of Flowers, though at a distance, through the Infirmitie of Sight, it may represent one Confused Color, yet Sensibly hath so many several and distinct Colors: and so dry Powders of Blew and Yellow being very finely Pulverisated and Mixt together by a close Aggregation may appear Confusedly Greenish; which is only the same Infirmitie of Sight, and may be rectified by a Microscope: whereas Nature is certainly Natural, that is, most Genuine, and Real, in all her Operations, and not, as such Uncouth Opinions would render her, only External Violence, and Imposture. And as there must be such a Local Union of Spirits *per omnia Puncta* of the Body of Matter to Consubstantiate it and Appropriate it as a Particular Body for itself, which otherwise could not be so Consubstantiated *per omnia*; so the proper Union or Mixture of Spirits among themselves though it be Coextensively *per omnia*, yet if it be not also Spiritual, that is Spiritually Contempered, and Coadunated, the Generation will be Imperfect, and either Momentary, or Meteorical. As if Cloth or Paper be wetted with Water, though there be a notable Imbibition thereof by the Cloth or Paper, yet they are not Perfectly Impregnated, and so there is no Perfect Generation; but they seem still to remain Cloth, or Paper, and Water, severally and distinctly in their own Natures; and not to be Mixture, into one *Compositum*: and yet that Imbibition is an Inception thereof, so that when they are Perfectly Separated again by Exiccation, and Evaporation, the Vapor which is a very Subtle and Intenerating *Menstruum*, as I shall shew heerafter, doth Evoke and carry away with it some of the Spirit of the Cloth, or Paper, Mixture with it. But Oiled Paper seemeth to have a farther Degree of Imbibition, and is not so easily Separable, and is like Staining with Colored Corpuscles, Liquefied that are so Imbibed, which is of a middle kind between Mingling of dry Colors and Dying in Grain. And there is a Perfect Coextension or Local Union *per omnia* of Emanant Colors, which yet is not Complete Generation, because their Substantial Spirits are not Locally United, though the Emanant Qualities are Locally Mixture *per omnia*; as if Rays of Light be Transmitted through a Blew and through a Yellow.

a Yellow Glas so as they Intersect and are thereby Locally United *per omnia*, there will be a Green Generated by that Intersection; or if you hold the two Glasses Partly one over the other against the Sun where they are Single they will appear Blew, and Yellow, and where Double a very Orient and Smaragdine Green: and yet these being Emanant Rays, belonging to their several Inherent Qualities, must necessarily remain several; and only make a Local and Temporary *Compositum* of the several Emanant Qualities, while they are so Locally United *per omnia*. And this Generation or Corruption is Instantaneous and without any Gradual Process; for in the same Instant when the Blew and Yellow Rays are United, a Green is thus Generated thereby, and when they are Disunited it is Corrupted: And so some more Perfect Generations, which are not only Material and Local, but Spiritual Compositions; as of Sounds, Magical Virtue, Life, and the like: but there are in some others Inceptions, and several Successions, from the Primitive Corruption to the Ultimate and Complete Generation, which Chymists therefore call a Process: and again generally according to the Process of Generation so is the Process of Corruption; yet if the Extrinsic Generator or Corrupter be more Prepotent, it may Generate or Corrupt more strongly and suddenly and also more, durably though some *Composita* do require more Time and will not be Generated, as such, in less Time, or by more Prepotent Generators; as Fire doth strongly and suddenly Generate and Corrupt generally any Elementary *Composita*, being the most Active Element, yet some will not be so Generated by the Torrid Power thereof, but in more Time by a Calesactive and Gentle Heat, in Baths, Horf-dung, hott Sands, and the like. And in all Generations, which are not Momentary (as that of Emanant Colors, and the like) there are first Inceptions, and Embryons thereof, and so more and more Perfect *Composita* by Degrees, in every Instant of the Process thereof, which if it be produced to the Perfection of the Species, is Perfect, and otherwise more or less Meteorical and Imperfect. But though Local Union only doth not make a Perfect Generation of the *Compositum*; which therefore is as suddenly Separable, as it is Miscible, yet no perfect Generation can be without such a Local Union *per omnia*, as well as Spiritual Union, as I have said: and such a Generated *Compositum* as is by



both is not easily Separable, or Corruptible. And I desire that trial may be farther made heerof, whether any Substances so Separable were ever so Generated and Spiritually Impregnated *per omnia*; (as Metall Corroded or dissolved by *Aqua fortis* which will again return into its own Body, and perhaps was only Comminuted and made more Fusile, but never Impregnated by the *Aqua fortis*) which commonly appears by Alteration of the Density of the Body. But Flame which is a most Momentary Substantial *Compositum*, as I shall shew heerafter, is a more Perfect Production of the Actual Fire out of the Potentiality of the Fiery Vapour, and so seems continually to be Corrupted and pass away with every Individual part of the Fume. And I suppose Brine to be a Perfect *Compositum* of Water and Salt, which can not be Præcipitated, nor Percolated, or the like. And it appears plainly that they are so Mist *per omnia* by the former Experiment of their Condensation, which cannot Possibly be only by Aggregation or Allocation. Nor can they be sever'd by any Filtration, though never so Subtle and Powerfull, as may be tried by Mint, Willow, or the like sett in a Glass of Brine, which will draw up both the Water and Salt together; and though by the Vegetative Power and Plastical Virtue therof it will afterward Excern and Expume the Salt awhile, yet it will be soon overcome and killd by it, as Salt doth generally kill all Vegetatives (except some Seaweeds which require and retein a Saltnes in themselves) if it be too strong, though a little Saltness, and such as the Plastick Virtue can overcome and subordinate to itself, may excite Vegetation both in the Earth and Seeds. Thus as Matter is Consubstantiated with Elementary Spirits, and they one with another, so also with Vegetatives, and they with Sensitives; and so certainly Vegetatives; might be Mist one with another, as well as Sensitives are in a Mule and the like, which are more Intire and Indivisible in themselves, and not so Miscible as Vegetative Spirits, as I shall shew heerafter: though they are none of them Properly Indivisible like Immaterial Spirits, becauf they are Material and do Immediately or Meditately Consubstantiate the Matter, which is Divisible. But probably none of these Spirits are necessarily Ingaged in any Particular Body or part of Matter nor Confined un'o it, but only Contained within the Universal Body therof, as I have said.

said; becaus no Matter, which is equally Indifferent to all Spirits, and Receptive therof, is so mutually Engaged to them. Yet as Elementary Spirits do require a several Density or Rarity of their Bodily *Composita* (which they Form for themselves according to requisite Degrees of Density and Rarity, though generally without any Regular or Symmetrical Figures) So Vegetative Spirits have a Plastike Virtue whereby they do also Regularly and Symmetrically Effigiate their own Bodys, and the Bodys of Sensitives whereunto they are subordinate, and make them more Organical, as fitt Offices, and Instruments for those more Regular and Oeconomical Spirits (which Oeconomy is only Potential, and not Actual, untill Generation.) And then, becaus they are also very Vehement and Operative Spirits, and like Culinary Fire would soon be Extinguished, they require a constant Fuel and Nutriment; yet that Nutriment is not like the Fomes of Flame, which is only *Fumus Accensus*, and so the Individuality of the Flame is continually changed with the Individuality of the Fume, but a subordinate Nutriment of Vegetative Spirits by Elementary, and of Sensitive by Vegetative; which are so Subordinate one unto another, as I shall shew heerafter. And the *Compositum*, Vegetative, or Sensitive (which, as I have said, is more Intire and Indivisible, as it is also more Oeconomical) remains the same in its Oeconomical Individuality till it be corrupted: otherwise a Tree, as an Oak, or the like, should be like *Theseus* his Ship, at last not the same which it was at first; and so an old Beast should not Remember what he did when he was young, if he should not continue Individually the same. But though the more Excremental Parts as Leavs, Flowers, Hairs, Nails, and the like do often decay, and are as often renewed, and the more Integral Parts less, as Pith, Bark, Flesh, and the Like; and the more Noble and Constituent Parts least, as Root Wood, the Skeleton, Veins; Arterys, Nervs, Intestines, and Organs; yet certainly the Individual Predominant Spirit Vegetative or Sensitive, which Denominates the *Compositum*, and renders it Individual, doth remain untill the Dissolution therof. The Excess of Nutriment is turned into Augment of all those Parts, and perhaps of the Spirit itself, which as it may be Mixt with other Heterogeneous Spirits, as in a Mule; so may also Unite with more of its own Homogeneous Spirit, and be Augmented thereby, untill



it attain its *Acme*. Nor is there Properly any Consistent State without any Growth or Decay, as in a Square; but when the Growth ends the Decay begins, though more like the Ascent and Descent of an Arch, then of an *Isoceles*; that is, most at first and last, and least in the midst. The Excess of Nutriment and Augment doth Generate other Individuals of the same *Species*, and though Generation be during Nutrition, and Nutrition during Augmentation, if the Nutriment be Copious, and the Actual Virtue of the Spirit Vigorous, which can Concoct to all those Degrees, and accordingly Decide what is requisite for these several Uses; yet if otherwise a Beast or Tree be Penuriously Nourished, it will be Dwarfed, or very little Augmented, and Generate less; because Nutrition is First and most Necessary for the Individual *Compositum*, Augmentation Next and Less, and Generation Last and Least. And indeed Nutrition and Augmentation, are, as other Subordinate Generations, for the Preservation and Growth of the Individual *Compositum*; and for the other, which is therefore more specially called Generation, because it is Coordinate and Specifical, for the Propagation of another like Individual *Compositum*; which is by Collecting and Composing another Specifical Spirit and Body into the *Epitome* of the Seed, which, as I have said, by its own Intrinsic Virtue doth Intrinsically Generate itself, and so becomes another *Compositum* in itself, Effigiating its own Body, and Nourishing and Augmenting it, and afterward also Generating another by the Plastic Virtue thereof, and other Internal Spiritual Powers, which God first Created in and with the Spirits in the Beginning, and were afterward Actuated and set in Order by the Divine Spirit, who was the Supernatural and Universal *Protoplastes* of them all, as I have shewed. And so they still continue in their Successive Generations and Corruptions; wherein, though the Spirits and Spiritual Qualities be the chief Operators and Architects, yet the Matter is the Body, and all the Accidents, and Affections thereof are accordingly Instrumental therein: and so are also all Common Accidents; as Number, whereof the chief Instrumentality is Unity, which doth Fortify and reduce several Principles into one *Compositum* Oeconomy and Individuality. Nor indeed can I conceive any other Power to be in Number, which is only so many Units; and the very Multiplication thereof or Duality is rather Instrumental in Corruption than in Generation. Also Time

is very requisite in the Process of Generation,, as I have shewed. And so likewise Extension; for no Body either Elementary, or Vegetative, or Sensitive, can possibly be only a Point; which can not Exist severally, And though every Part or Particle of Water be Water, and the like, yet Organical Bodys must have several Organs, or so many Members or less Corpuscles wherof the Whole must be Composed; and that according to the *Species* therof must be of some requisite Magnitude; for though Oaks and less Trees may be of several Sizes, yet none of them can be so small as some Herbs, and Grass; and so though there be Dogs of very Different Bignes, yet none can be so little as a Mite, or some almost Atomical *Animals*. Also Figure is very Instrumental heerin, as well as in Mechanical Tools, or in the Body of an Army; where the *Globus*, or Orbicular Figure, is for Safety round about, the Square *Phalanx* for Strength, the *Cuneus* or Wedg to make Impressions, and the like. And so they and others are also requisite in Nature and Natural Operations, especially in Organical *Composita* which require Bodys fitt for such Operations, of Various Figures, and most Symmetrically Composed. And no Art of Statuary, or Painter, can so farr Imitate them as to endure the Criticism of a Microscope. And the whole Feature and Beauty of Organical Bodys is only the Symmetrical Conformity of their Various Figures. Porosity serveth for Excerning, and thereby for Preservation of the *Compositum*, and also for Corruption by more easie admission of any Dissolvent or *Menstruum*, being a Partial Commiution or Dissolution of the Body in itself, as Perfect Continuity doth fortify. And therefore also Density doth Preserv, not only in Proportion to the Parts, but in the Whole, as it is more United in itself and in all the Parts therof: and hath Proportionably more of the Spirit, and more United. And as Maceration doth weaken, so also Rarefaction. And every Specificall Spirit doth require a Body of a Proper Density or Rarity, wherof there are Innumerable Degrees, and it can hardly be supposed that any two Bodys of Spirits Specifically Different are of the same Degree of Density exactly, but either more or less. And as the *Compositum* is Varied by a new Predominating Spirit, so the Density or Rarity of the Body therof is Varied likewise: as may appear by Impregnating, and Superimpregnating, and the like. And so likewise Gravity and Levity and the Motion therof to Station, but especially the Principal Motion.



tion to Union or Contact, are very Instrumental in Generation and Corruption, as appears by the Local Union of Eminent Rays. Yet Matter and all these Various Affections thereof are no Formal Causalitys of Spirits, or Spiritual Qualitys, or of the whole *Composita* Consubstantiated and fitted thereby, as I have shewed. But when the *Compositum* is thus Composed Materially and Spiritually, and Invested and Instructed with all the requisite Accidents, both of the Matter, and Spirits, then is the Generation thereof Perfected, and then it doth Appear and Operate, being thus Produced out of Potentiality into Actuality with all the Furniture thereof, and so continues Naturally untill it be again Corrupted. And so were the Original *Composita* Produced by the Divine Spirit in the Six Days, and have ever since, and still do continue according to that Instituted Courf of Nature; From which when God himself doth Vary, it is Miraculous, and when Nature doth Aberr, it is Monstrous: and yet even those particular Monstrositys are generally Comprehended within this Universal Law of Generation and Corruption; as all Equivocal Productions, and the like; being otherwise generally Conformable therunto, as I have shewed. And as Nature doth only work by those Ingenerable and Incorruptible Principles, Powers, and Virtues, which God first Created in the Beginning, and then sett in Order in the Six Days; so Art can only work by Application of these Natural Principles, Powers, and Virtues, which is also Monstrous and Disorderly in respect of the Constant Courf of Nature that was Produced in the Six Days, though it be according to the Nature of Intellectives, and Sensitives, being External Operators, so Ingeniously and Artificially to Apply them, by their Natural Wit and Art, which is something more Divine, and more like to the Operation of the Divine Spirit, even thus by Disorderling to Order and Improve Nature for their own Use and Service. But neither Nature, nor Art, can work Miracles, much less Create, or Annihilate, any thing. Nor hath God himself ever since Created any new thing Generable and Corruptible, nor ever wrought any such Miracles; or added any thing to the *Chaos*, or Elementary World, which he first Created in the Beginning, and Made in the Six Days, as I have shewed, and then Rested from all that Work of such Improper Creation. Nor probably will he ever Annihilate any thing thereof, more then of Superather, or the Intelligences; though the first *Chaos* may after-  
ward

ward become an everlasting *Gehenna*, and many present Actualities be for ever Reduced into Potentiality. However the Created Essences shall remain Eternally for the Eternal manifestation of the same Divine Glory: as the Wise man hath said, *I know that whatsoever God doth shall be for ever; Nothing can be putt unto it, nor any thing taken from it.*

V. Now as the Divine Spirit did thus Prepare and Predispose the *Chaos*, and out of it Produce the whole Frame and Course of Natural Generation and Corruption, so I shall from the Review thereof Deduce the whole Scale and Order of all Generable and Corruptible Natures. Whereof Matter is the Lowest, which is the Common Body of all such Spirits as do Consubstantiate it, Immediately, or Mediate, and Mansion of others which do only Inhabit it. And no Matter can be without some Spirit Consusubstantiating it, being only an Imperfect Substance in itself, and therefore in the Beginning had a Superæthereal Spirit to Consusubstantiate the Superæthereal Body of Matter, whence it is Denominated Heaven, as well as Æther and Air, and therefore also Superæther, though it be not Elementary yet is of the same *Classis*, becaus it doth Immediately Consusubstantiate the Matter, as well as Elementary. But though the Matter can not be without some Material Spirit so Consusubstantiating it, yet, as I said, they are not Ingaged to any particular Matter but may Remove from one part of Matter to another, as Matter may from one Place to another in the Universal Body thereof; and clearly Immaterial Spirits, which do not Consusubstantiate the Matter, need no Consusubstantiation by it, and may be in this or that Extension of the Matter, but can not pass beyond it into any Imaginary Inanity, or Nonentity; becaus they also are Entitys; and within one and the same Universal Province and Law thereof. Much less can any Matter wander beyond the Utmost Limits of itself which is the Circumferential *Superficies* of the Highest Orb thereof, beyond which it can not Ascend, as it can not Descend below the Center. Wherefore that *Fansy* of *Lucretius* is very Futile and Vain, that if an Arrow were shott forth beyond that Circumference it would fly forward Perpetually; for then it must always Ascend from the Center of the World, and never attain any other Center of Rest; which is most contrary to the Law of Motion to Station; and also might Exist, Locally beyond the Universal



sal Extension of the whole Body of the World, and be another  
 less World or Univers in itself, which is most contrary to the Law  
 of Motion to Union; whereby, as I have said, the whole Body of  
 Matter is Naturally Constituted such an Orbicular Body, by such  
 a Perfect Circumference and Center, and is not Protuberant in  
 any Part of itself or other then a most exact Globe, becaus that is  
 the most United Figure, wherunto the most Universal Law of Uni-  
 on doth Oblige the whole Matter therof: and even Spirits them-  
 selves do Exist only within the Universal Coextension and Locality;  
 becaus beyond it there is no Place, or *Ubi*, or Entity, wherein they  
 may Possibly Exist; for as they have no Extension of themselves, so  
 also no Place, or *Ubi*, whatsoever, but only in the Extension and  
 Body of Matter, wherof, and wherein, they are Such Active and  
 Operative Substances and Spirits. The next in this Scale of Na-  
 ture are the fower Elements; Ether, Air, Water, and Earth;  
 which none can deny to be, and I shall now prove them to be Ele-  
 ments, when I have first explained the Term, which will plainly  
 Elucidate the Thing: and I shall do it Exemplarily by Matter it-  
 self, which is indeed the most Common Element, or *Præelement*  
 therof, and Immediately Consubstantiated by them, and the Su-  
 peræthereal Spirit: and so Matter is their first Body, or Element,  
 which is the true Notion of an Element; and so I intend it to be a  
 Natural *Substratum* of some other Superior and more Active Sub-  
 stance, and which may be so Composited or United with it, as a Bo-  
 dy with a Spirit but not that the Spirit is Produced out of any *Po-  
 tentia*, or Equivocal Causality therof, which I have already suffi-  
 ciently refuted; or that it is Generated thereby more then the  
 Body is Generated by the Spirit; but that both are Composited or  
 United Naturally together in one *Compositum*, which is the very  
 Generation therof. And these fower Elements are commonly so  
 called in respect of the Superior Spirits, wherof they, with the  
 Matter, become a Second Matter, or Prepared Body therof, as the  
 Matter was of them, for they only, and the Superæthereal Spirit,  
 can Immediately Inform the Matter, and the Superior Spirits only  
 Mediatly by them, and so one by another, according to their  
*Classes* and Ranks in the Scale of Nature, as I shall now shew. And  
 though any one Elementary Spirit might Consubstantiate the Mat-  
 ter in the first *Chaos*, as well as the Superæthereal Spirit, yet until  
 they were all Prepared and Predisposed by the Divine Spirit, and  
 fifty

fitly Mist together in the Three first Days, no Vegetative or other Superior Spirit could be Produced, or Inform any one of them alone, and also the Matter; becaus not any one of them alone together with the Matter is a fitt Body of the Superior Spirits, more then the Superæther, which is Superelementary, and no such Elementary Body of any other Spirit whatsoever. But these Fower Elements must be all Mist together as they were in the Three first Days, and never since were, nor shall be, untill the Dissolution of the World, wholly Unmist and Separate, as they were in the first *Chaos*; though that Mistion is and must be Varied by continual Generation and Corruption, to make them more particularly fitt Bodys for the severall Superior Spirits, wherof probably every *Species* doth require a Various Mistion, aswell as some Variation of the Figure and Density of the Matter, which is so Varied by the Various Mistion of these Elementary Spirits. Now that they are fower such Elements as I have described, doth plainly appear by their Denominations in the first *Chaos*, and their orderly Preparation in the Three first Days, for the Production of the Superior Spirits, Vegetative, and Sensitive; which I shall more fully discover in my ensuing Discourses therof. And as I have proved that they are not only Matter, nor any Diversifications therof; but do so diversify the Matter, as their Body for themselves; (and much less are they Produced out of any *Potentia* of the Matter) so also are the Superiour Spirits no Diversifications of them, but do so Diversify them for themselves in their Various Mistions. By all which precedent Discourses I have sufficiently proved that there are such Inferior Substances and Spirits which are the Bodys or Elements of the Superior, otherwise all Material Spirits should only be Matter, or they should be without their Bodys, and consequently Immaterial: wherefore if they have such Bodys, and yet are not the same with those Bodys, then plainly they are the Spirits, or more Active and Operative Substances which Inform or Inspirit those Bodys, and Reside, and Operate therein, as their Domicils, and Offices; which I therefore call their Element or Subordinate, and Preparatory Substance, or Elementary Principle, of the *Compositum*, which together with the Predominant Spirit therof doth Constitute it such a *Compositum* as it is: by which Composition and Constitution it is Generated, and so Denominated by the Predominant Spirit therof to be of this or that *Classis* in the



Scale of Nature. And this is all that I intend by Element generally; and whosoever frames any other Notion thereof, may thereby doubt and dispute it, and fight with his own shadow; though more particularly we call these first and lowest Spirits which Immediately Consubstantiate the Matter Elementary, and so the fower Elements; becaus they are the first and lowest of Spirits, and the first Elements thereof. And sensibly in all Dissolutions of any Material *Composita*, as we may still deprehend Matter, which is the Præelement of all others, so also these fower Elements, which can not now Naturally Exist Pure, as they did in the first *Chaos*, though we call them this or that Element, as any of them is more Predominant. And so in the Carcass of any Beast, when it is dead, yet there may be still some other Spirits remaining, but most apparently the Elementary; and so in the Trunk of a dead Tree, or Timber, or the like: and there is not only one, but all Power, which also do always remain in all Chymical Separations whatsoever; so that the *Caput Mortuum* is not only Matter, or only one Element, as in the first *Chaos*, nor their Spirits, as they term them, only Spirits, but also Corporeal Matter, and all the fower Elements, and having some Various Mixture thereof, whereby any *Caput Mortuum* still differs notably from others, and any such Chymical Spirit from others; which could not be if they were most Simple Substances in themselves, or Matter, and only one Spirit, which would make only one *Compositum* thereof, not Specifically Different from others. Nor is it Possible for any Art, or any Power of Nature (according to the present State thereof which was first Instituted by God) to Separate these fower Elements one from another; though they are and may be Variously Mixt one with another, as also it is not Possible to destroy their fower great Elementary Bodys, Æther, Air, Water, and Earth, in the whole; which though they are also Mixt one with another, (and so Denominated from the Predomination of every one severally in those general Bodys) yet that Predomination of their Elementary Spirit is so notable, and their vast Bodys so notorious, that they do Ocularly declare to every Ey their fower Elementary Natures, and also that they are the Common Elements, and Prepared Bodys of all Superior Spirits, within this Elementary Orb, which they wholly divide among themselves, and are the great Storehouses and Stocks of Nature, from which all Elementary Bodys were borrowed, and to which the Inferior do  
return

return again. And accordingly they are as fower several Provinces, Variously Inhabited and Furnished with all the *Composita*, Starrs, Vapors, and Meteors, Fishes, Beasts, and the like, and Situated according to the Predominance of their proper Elementary Bodys, and requisite Station therof in several Spheres one above another, so as no Planetical Orbs are. And heer I must also observ from my Text, that there are only fower such Elements, and no more (nor any such several Kinds of them, or of any of them; as is expressly said of Vegetatives, and Sensitives, as I shall shew heer-after.) And therefore we have no mention of Stones, Metalls, and the like, in this History of the Creation, as of several Elementary Kinds, becaus they are only several *Composita* of these fower Elements. Wherefore we must also understand that there are not only fower first Qualitys of these fower first Elements, as some have supposed, which could never make so many and so very Different Sorts of Elementary *Composita*, as there are in Nature; nor yet may we assigne to any one Element besides its own Proper first Quality some other Social Quality of another Element in a more Remiss Degree, as to Æther or Fire besides Heat Intens, Drines Remiss: for no Spirit whatsoever hath any Proper Spiritual Quality of another Spirit either Intens or Remiss; of and in itself, becaus every such Spiritual Substance is a Proper Spirit in itself, and hath its own Proper Qualitys Differing Specificaly, (besides such as are Genericaly Common to the same *Genus*) whereby only we know it to be what it is; and thus, unles we should affirm Æther, or Fire, to be also Earth, we can not assigne any Drines to it, as any Proper Quality Subsisting in it, and flowing from it; and certainly it is no Affection of the Matter, as Extension, Figure, Density, Gravity, Motion, or the like, which may be Common to Spirits in respect of their Bodys: Also if it were a Proper Quality of any other Spirit it should not be Remiss, but most Intens; for every such Spirit Naturally Acts to the utmost, and there is nothing in itself to hinder it, becaus no Nature doth Obstruct or Restrain its own Operations, unles it be Spontaneous (for that indeed is an Effect of Spontaneity) nor doth Heat Naturally hinder Drines, but should rather Advance and Assist it, as all Qualitys of the same Spirit are generally Assistant one to another; and so indeed may the Accidents of several Substances, as of Matter and Spirits, be Analogous, and of several Spirits, Homœoge-



neous; though they be not Homogeneous, as I shall shew heerafter: and thus Drines is more Concordant with Heat than with Cold, which is Contrary to Heat; though neither of them be any Proper Qualitys of the same Spirit of Æther, or Fire, but of other Elements: nor doth Heat Properly or Directly Dry more than Moist, but only Consequentially, as I shall also shew heerafter. But they who can affirm all the Elementary Spirits to be Educ'd out of the *Potentia* of Matter, and that one Element may be Transpeciated or Converted into another, may also affirm what they pleas of their Qualitys, and transfer them from one to another: which Suzugy of Qualitys they have also Invented, as they suppose to Reconcile and Mediate between Contrary Qualitys; though they be not any Degrees of either of them, but Proper Qualitys in themselves, and Accidents of other Substantial Spirits: nor doth that Contrariety of Qualitys need any such Mediation, being Produced by Degrees out of their Potentialitys, which are not Contrary Actually, or otherwise Mist by Degrees into their Actual Contemperature. The Ignorance of which Doctrine of the *Chaos*, and the Potentialitys therof, and the Imaginary Supposition of such a *Potentia* of the Matter, out of which not only Existences, but the very Essences both of Accidents, and also Substances, may be Educ'd, by Equivocal Causalitys, Transpeciations, and such new kinds of Creation, and Annihilation, as men have pleas'd to Invent, instead of the true Creation, and *Chaos*, which God hath Made, and Revealed to us, hath been the Fundamental Error, and Root of all the Consequential Absurditys. But yet while they thus Grope in the Dark, they Catch at some Shadows of Truth; as plainly their *Potentia* doth allude to the Doctrine of Potentialitys, and is Substituted instead therof: and so this Supposition of several Different Qualitys in the same Substance doth partly Intimate another great Mystery in Nature, which I shall now discover and unfold; that is, That indeed there are several Qualitys also Created Essentially in one and the same Substance, Proper to itself, and so subsisting in it, and flowing from it, as I have already declared concerning Matter and the Affections therof; not only Mediate, as Figure from Extension, and Gravity from Density, and the like, (which are only several and Really distinct Products or Propertyts of the same Qualitys) but as others Immediately Subsisting in, and flowing from it; as Extension, and Density, which are not such  
several

several Property; one of another, for so the same Orbicular or Cubical Extension and Figure may be either Dens or Rare, Grave or Light, and the same Density or Rarity, Gravity or Levity, may be of any Extension or Figure whatsoever; and they are not concerned otherwise one in another, but only as they are Social Qualities of the same Substance: so as every Extension or Figure must have some Density, and all Density some Extension and Figure Indefinitely. And thus in the *Æther* there is not only Heat, but also Light; and Planetary or Circular Motion, and perhaps several other Principles of Influential Virtues and Qualities not only proceeding one from another, as Particular Property, but Immediately Subsisting in, and flowing from the *Æthereal* Substance; and so Cold, and some Active Principle of Sound, and others, in Air; Moisture and some Active Principles of Odor, and Sapor, and others, in Water; Drines, Opacity, Consistence, and Magnetike Polarity, and others, in Earth: as certainly we all know that there are such Various Virtues in Vegetative and Sensitive Spirits. Of all which I shall Discourse hereafter, and now only observe that of these, and the Various Mixtures and Temperatures thereof, all the Elementary *Composita*, like so many Arithmetical Changes, are Compounded, which therefore are not mentioned in this History of the Creation; because they are only Compounded of such other Simple Essences before mentioned, and not of any new Essence Created in the Beginning, and not before mentioned, as Vegetative, and Sensitive Spirits, and the particular Sydereous Spirits: whereas all Sulphureous, Mercurial, Saline, Sanguineous, Bilious, Phlegmaticke, Oleous, Saxeous, Vitreous, Ligneous, Carneous, Coriaceous, Osseous, Corneous, and many other such Elementary Qualities, are not Simple in themselves, but Compounded of others, which are such, and were the first Created Essences, and Principles thereof. And if we could Investigate and find out all those Simple Qualities (whereof very many are still Occult to us) none of these Compound Qualities could be any longer Occult. And yet many Curious and Chymical Wits, because they will not freely acknowledge their own, which yet indeed is Human Ignorance, and Common to us all, will also Substitute as Simple Principles, such Compound Qualities of *Sal*, *Sulphur*, and *Mercury*, though others among themselves not satisfied heerewith do also assigne many more of the rest; and yet none of them all are Principles or Simple Essences,

but



but only Compounds, and Decompounds of others, or one of another. And the last Chymical Separation that can be made, Sensibly will be only a Reduction to the fower first Elements, that is, to something wher'n one of them is most Predominant, as in their fower great Elementary Bodys; though like them they can never be Perfectly Unmixt and Separated. Thus *Sulphur* is as Fire, Predominant in the Composition therof, *Mercury* as Water, and *Sal* as Earth; but becaus Air is the most Insensible of all Elements, therefore they have not observed it among the rest in their Separations, nor in this or any other of their Distributions: so that if we should wholly trust to Chymists, we might even lose one of the fower Elements; though they are to be commended heerin that they have not assigned or set up Mercury Volant, which is only a Vapor, instead of it. Also like Air there are many other Simple Essences of Elementary Qualitys, which in their Mixture with others do not Sensibly so betray themselves, as those which they call the fower first Qualitys, and yet Philosophers have found out the Sense of some of them, as Opacity, Magnetical Virtue, and the like; which I shall endeavour to prosecute and promote as farr as I may in some previous Essays, and so recommend the more Curious Search therof unto others, as one of the greatest *Desiderata* in Philosophy: and now proceed farther. As Elements are the Second Matter, or Prepared Body of Vegetatives, so are they also of Sensitives, as a Third Matter, or Prepared Body therof; and so Sensitives do Comprehend Subordinately in their Composition Vegetatives Immediately, and Mediately the Elementary Spirits, and by them more Mediately the Matter, and Vegetatives Immediately the Elementary Spirits, and Mediately the Matter, and Elementary Spirits Immediately the Matter; but not Convertibly; nor are any of the Superior Educ'd out of the *Potentia* of the Inferior, becaus they are Superior, but only Subordinate them unto themselves, as I have said. And as Elementary Spirits require several Diversifications of the Matter to make fitt Bodys therof for themselves, and accordingly diversifie it by their own Architecture, so do Vegetative Spirits both it and the Elementary Bodys, and so Effigiate it, and Temper them, for their own Proper Use, as I have said. And I suppose all Plastike Virtue to be from these Inferior Spirits; that is, Inorganical from Elementary, and Organical from Vegetative: and though the Sensitive Spirits do Predominate and may Govern

Govern them, yet that is in another and higher maner by Spontaneous Perception and Appetite, as Living Souls; and their Plastike Virtue is of a Mechanike and another more Vital Kind, that is, Artificial and Irgenious: and so that they are not Architects of their own Bodys, as hath been supposed by others, but of their Cells, Nests, Houses, and the like Artificial Habitations: for if a Beast first Live the Life of a Plant, then certainly the Sensitive Spirit, which doth not yet Live and Operate doth not Fabricate the Curious Structure of its own Embryonical Body. Also all Sensitive Operations are with Sensation, that is, Perception and Appetite; but we do not so Sens the daily Concoction, Nutrition, and Augmentation of our own Bodys, nor Formation of Seed therin; and therefore it is not the Proper Work of the Sensitive Spirit, but of the Vegetative, which is apparently Plastical in itself, and Forms its own Body Organically, as in Trees, Herbs, and Grass, nor hath any one Spirit in itself the Proper Qualitys of another. And though Elementary Spirits are Definitely Fower and no more, yet these Vegetative and also Sensitive Spirits, are Indefinite; and it is so said of them, that they were brought forth after their kinds Indefinitely, and so all these *Species* of Beasts and Fowls were preserved in the Ark, and can not be Multiplied, nor shall be Diminished. Nor are there only such several Spirits of Trees, Herbs, Grass, and of every *Species* of them, which by a Proper Plastical Virtue Created in and with them by God do severally Effigiate their Proper Bodys, and the Organism therof, but also Proper Subordinate Vegetative Spirits of Fishes, Fowls, and Beasts, and of every *Species* of them, which doth so Effigiate their Proper Bodys, and the Organism therof: Yet as the Vegetative Spirits are not also Elementary, nor do, nor indeed can, contain the Contrary Qualitys therof in themselves, so neither do Sensitive contain in themselves Vegerative and their Facultys, though they are Compounded with their several and Proper Vegetative Spirits which Organise their Sensitive Bodys, and which I suppose can not be so Organised by the same Plastike Virtue of any Tree, Herb, or Grass, which is Proper to the Spirit therof, and would only make it to be of that Shape and Substance. And consequently I conceive that there is also a Proper Mixture and Temperature of the Elementary Spirits and Qualitys, which is so Subordinate and Subservient to the Sensitive Spirit, and that they are all Consubstantiated



ated together in and with the Matter in the Sensitive *Compositum*. And lastly, a Proper Sensitive Body thus Prepared is a fourth Matter or Body, of the Intellectual Spirit of Man; and the Body of *Adam*, into which God first Inspired his Human Spirit, was such, and more then a Statue of Clay, as is commonly supposed. And this Spirit of Man thus Inspired is of another and farr Different Kind from all the former, which were not Inspired into, but Educated out of the Inferior Bodys therof; nor is it so Consubstantiated with them as Material Spirits, becaus it is Immaterial, and a Perfect Substance in itself, which needeth no such Consubstantiation, but like an Angelical Spirit can also live and Operate Separately. Nor yet doth it only Possess a Body as an Angel may; but hath a Natural Union and Composition with it, and doth Naturally Inspirit or Inform it, that is, Live, and Operate in it as in a fite Domicil and Officine in this Conjunct State; and Predominate and Govern it, as a Master in a Ship. All which I shall more particularly declare heerafter, having now generally treated therof only to discover and describe this Scale of Nature, as God did first Erect it, and as it still standeth, whose *Basis* is the Matter, and whose *Acme* the Intellectual Spirit; wherein Man also is Coordinate with the Immaterial and Separate Spirits of Angels. And so all Created Nature is not only Locally but Politically United, that is, all Coordinate, except Angelical and Human Spirits, may be properly Mist, but Subordinate, except Angels, only Composited together, but not Confounded, either by Transpeciation of one *Species* into another, or Production of one out of another, as some have supposed; nor, by Midle Natures, or Participles, as they call them, partaking of the Natures of several *Classes*, which is more Monstrous and Anomalous then the Generation of Mules, and the like, which are only of one and the same *Classis*, though of two Confused *Species* therein; but every one is in itself either Spirit, or not Spirit, as all Elementary, and other Material Spirits; Vegetative, or Not Vegetative, as Moss and the like; Sensitive, or not Sensitive, as all Plantanimals, Intellectual, or not Intellectual, as Idiots, Lunatiks, or other Human Monsters: though there be such Compositions and Subordinations *Classes* and *Hosts* of them all, and of one unto and with another, as I have declared; and as *Moses* hath concluded this History of the Creation, *Thus the Heavens and Earth were Finished, and all the Hosts of them.*

VI. And yet some, who will not so understand it, seem to deny any such Scale and Order of Nature, and any such Oeconomy and Polity therof; because they also deny those very Natural Principles, Powers, and Virtues, which God hath Immediately Created, and Imprinted therein; since they can Educe no such things from the rude Matter, nor indeed doth any such Wisdom or Will appear to be Actively in any Inferior Natures which are neither Sensitive, or Intellective; nor yet doth it proceed from the Sensitive, and Intellective Facultys in the Superior Natures, nor is it in the Universal Nature of them all, and therefore they laugh at all such Expressions, as that Nature intendeth the Best, Affecteth Union, Abhorreth Vacuity, and the like: and I suppose no man so void of Sens and Intellect as to conceive it capable therof, but when we see and must acknowledge such Analogous Effects therein, we must ascribe them to some Analogous Causalitys, and express them by such Analogous Expressions, which is all that is Intended thereby; that is, that God hath so Ordered, Compaginated, and as the Apostle saith, *Catartised*, Nature, that it doth Naturally Cause the same Effects, and indeed more Powerful and Political, then our Intellective and all the Sensitive Spirits therein can Cause and Produce. And that God doth not so Cause these wonderful Effects Immediately by himself as he doth Supernaturally Conserve all things which he hath Created, Upholding them by the same Word of his Power; but Mediatly by Natural Principles, Powers and Virtues, which he who is Infinitely Powerful and Wise, so Immediately first Created and Imprinted in Nature, and thus sett it in Order in the Six Days, whereby it doth and shall so continue in itself untill the last Dissolution therof, to Cause and Produce such Effects; which certainly as none can deny them Really to be such, so unless he ascribe them unto the Immediate Power and Wisdom of God himself, and so only to such a Continued Creation without any other Natural Causation (whereas he saith, he Rested from all these Works which he had thus made and set in Order in the Six Days) he must acknowledge them to be also Natural and Created Causalitys then Produced and Actuated, (which indeed were the very Works of all the Six Days) because ever since there are manifestly such Effects, and therefore there must necessarily be some Causes therof, either Supernatural or Natural; for such Order, Oeconomy and Polity can not be reasonably supposed to be Casual, because it is, not only



most Regular, but also most Constant (which yet *Epicurus*, who was more Rational and true to his own Principles, did affirm) but must be either, as some others affirm, by such Immediate Divine Causation, which doth render all Philosophy (which is the Study of Nature and Natural Causes and Effects) Vain and Impertinent: Or otherwise it must be by such Natural Principles, Powers, and Virtues, as we have: as I have declared and proved to have been so Created and Instituted; and this indeed is that which we call Nature, Subsisting in all the Particular Natures, which do Particularly so Concurr and Cooperate therein; not through any such Active Wisdom or Will in themselves, but by their own Natural Principles, Powers, and Virtues, which God, who Created and Imprinted them severally and Particularly, did also so Coordinate and Direct Relatively and Maturely one toward another as that they should so Concurr and Cooperate to the Universal Good, Safety, and Beauty of one another, and of them all, and consequently of this Universal Nature. As an Artist who makes a Clock or Watch, or the like, so frames the Wheels and Parts thereof, and so sets them together, and so applies the Weight or Spring therunto, that they shall all Cooperate and Complete the Engine, for that Use, and the Production of that Effect, which he had Designed: and as Art, which is the Nature of Man, doth thus work by Artificial and External Application of Natural and Internal Principles, Powers, and Virtues, so doth Nature, which is the Art of God, Act and Effect the like, and more Curious Engines, wholly by them, Naturally and Internally: whereby not only the Weight or Spring, but also the very Plastical Figuration, Gravity, Motion, and mutual Application, is so Caused and Produced, though without any such Artificial Wisdom, or Will, in any Automaton *Compositum*, more then in the Clock or Watch itself, but by Created Impressions in the one Naturally and Intrinsicly as the others are so Effected by Violent and Extrinsic Application of that which is Natural in itself. And yet they who can affirm Sensation, and perhaps Intellection itself, to be only Motions of the Matter, might also, if they pleased, ascribe therunto Sense and Intellect, (as some have affirmed Elementary Natures to be Sensitive) which would not only satisfy their Doubt herein, but also confirm their Opinion of the other, though both be equally False, and most contrary to all Sense, and Intellect. And this acknowledged and agreed want  
of

of any such Wisdom and Will in Nature, which yet doth Produce such undeniable Effects, doth most Sensibly and Intelligibly prove a most Wise, and Willing, First Cause, that is, God, who, as I have already proved, that he Created all things out of Nothing in the Beginning by his Infinite Power, so he also both Created them in their first *Chaos*, and afterward Ordered them in the Six Days, and so Catartised the whole Frame of Nature with such Polity and Oeconomy, as doth Invincibly prove his Creating Wisdom, and Will, by these Created Effects therof, which are so Naturally Produced by Nature, as it is Gods Creature, Artifice, and Engine; and yet itself hath neither Wisdom, nor Will Actively, as Intelligent Creatures have in themselves. And thus the rude Matter which of all others hath least therof, yet hath thus Naturally in itself Motion to Union, and also to Station, and thereby doth Naturally cast the whole Body therof into a Perfect Orb, which is the most United, Uniform, and Capacious Figure; which also every Particular Body therof doth Affect and Endeavor as farr as it can, and doth Place all the Particular Bodys in their due Position. And if Matter may Act thus Politically without any Policy in itself, Why may not also Material Spirits, which are more Spiritual and Active, have their Particular Plastical Vertues, whereby they may also Effigiate their Bodys in fitt and requisite Figures for themselves, Inorganically, or Organically, and Oeconomically, though they have no Oeconomical Wisdom, or Will, in themselves. And even in Sensitives the same Effects are Produced without their Sentiment, and so let Man, who Comprehends all these Inferior Natures in himself, consider his own Body; and whether he doth Cause and Order the Introduction of his Finger to Union, or the Falling down of his Body through the Air to Station, or can hinder them with all his Sense, and Intellect, or whether therewith and thereby he doth Plastically Figurative and Effigiate all his Members, or can add a Cubit to his Stature, or doth so perform those most Curious and Chymical Works of Nutrition, Augmentation, Sanguification, Semination, and the like. And this Polity and Oeconomy is not Proper to any one Nature, but is Particularly in every one, and Universally in all, which are not only Subordinate, but do accordingly Communicate one with another. Thus every Individual Nature is a *Compositum* of more or less Principles or Parts, and more or less Oeconomically Composed, and Or-



dered, according to the Particular Nature and Orb thereof, which is heer in a Module of the great Orb of the Univerſ. So alſo all Specific Natures, which are Homogeneous, do Comply and Conſort together and open their Bodys one to another, and ſo alſo Generate one another, and there is ſome Accord, though leſs among Homogeneous, and as we ſay, *Par Pari*; and there are certain Analogys and Confederacys between Heterogeneous; yea even Adverſ and Contrary Natures do thus Conſpire together for the Common Good, as Reſt and Motion to Union, which may be Upward, and to Station which is downward, and ſo Heat and Cold, Moiſture and Drines, do all make a fitt Temperature for all Elementary, as well as Vegetative, and Sensitive *Compoſita*. And their own Proper Qualitys can not Actually Exiſt without ſuch Temperature of and with the reſt; which is their Political Perfection, though the others be their own Proper and Private Perfections. and therefore in the *Chaos*, though the Elementary Spirits did then accordingly Conſtitute the Matter of their Fower great Bodys by requiſite Proportions of Extension, Spherical, and Globular Figures, Density, Rarity, and their ſeveral Stations, and the like; yet they could not Actually Produce their own Heat, Cold, Moiſture, Drines, and their other Active Qualitys, before they were Prepared and Predispoſed by the Divine Spirit with fitt Miſtions and Contemperations; nor could they, or can they, yet Exiſt in their utmoſt Vehemence and Intenſion, without ſuch Contemperation (which as I have ſaid is moſt wonderfully Produced by Degrees out of their Potentialitys into ſuch Miſt and Contemperate Actualitys, more Naturally then by their Actual Extremitys, which Violently Oppugn one another, and thereby endeavor to deſtroy one another) and Such Actual Concertation and Oppugnation, which at laſt doth deſtroy one or both of them; as Flame, which is almoſt continually Incenſed and Extinguiſhed, and the like: and yet theſe Contrary Qualitys of the Elementary Spirits are thus Naturally Miſcible, wheras the Proper Accidents or Affections of any Subſtances of Different *Classes* are not nor can not be ſo Miſt in their Conſubſtantiated *Compoſita*. As in a Sensitive *Compoſitum* the Extension, Figure, Density, Gravity, Motion, and the like Affections of the Matter are not ſo Miſt with any of the Spiritual Qualitys; though they are United or Compoſited in the whole *Compoſitum*. Nor the Elementary Qualitys with the Vegetative, nor the

the Vegetative with the Sensitive, but as their Substances are of several *Classes*, which can not be so Mist as they of the same *Classes*, though Compos'd together, so they continue several in themselves, though they mutually Contribute and Cooperate in the whole, because they Subsist in their own several Substances. And because Individual and Specificall Natures do thus Confederate, therefore there is also such a Polity and Oeconomy of the Universal Nature which doth Subsist in them all; and not only a Scale of Degrees, wherof I discours'd before, but a Republike of all the *Cives* and Societys therof. And as Beauty, Virtue, Piety, and their Symmetrical and Conformable Excellencys, are the most Excellent things in Nature, so is this Polity, and Oeconomy, the Strength, Goodnes, and Glory therof. Wherefore as he is no very good Anatomist, who though he may know all the several Members, Parts, and Particles, of the Body as they are in themselves, yet knoweth nothing *De Usu Partium*, and the whole Composition, Cooperation, and Benefits therof; so he is no good Philosopher, who though he could know all the Atoms, and Corpuscles of Matter, and all Spirits, and Substances, and all their Accidents, and Affections, and the very Essences both of Substances, and Accidents; as well as their Existences, severally, as they are in themselves, yet knoweth not, or rather will not know any thing of their Mutual Union, Analogy, Confederacy, Cooperation, Oeconomy, and Polity, and all the Benefits and Advantages therof, which God hath Created in and with this Republike of Entitys, which we call Nature; and so Nature doth accordingly Effect, not only for his own Use and Service, but also for his Contemplation; whereby he doth neither acknowledg God to be the God of Nature, nor indeed Nature to be Nature, nor her *Mundus* any *Mundum*, and so renders his own Philosophy no Philosophy; which are such Absurditys, that I doubt he who only reads this Discours, may esteem it Idle and Superfluous, but if he also read their Discourses, he will find that they have made it Necessary. And I rather fear that all this, and much more that may be said, will not be sufficient to convince them, whose Delicate Wits are grown so Wanton, that they can not be pleas'd with any thing unless it be some Curious Novelty, and Ingenious Error, and so much delight to wander in the wild Labyrinth therof; that they care not to be brought out of it; where I shall therefore leav them to themselves,



selfs, and proceed in the beaten Path of Common and Solid Truth, which God hath sett out and Revealed in this History of Creation, wherein he hath shewed us how it was his very Counsel and Designe, thus to sett the whole Frame of Nature in Order in the Six Days, whereby he did Perfect it, and distinguish it from the first *Chaos*; and as he did Proclaim the Particular Goodnes of his Particular Works in their severall Days, wherein they were so Ordered, so when the whole System therof was finished, God saw every thing which he had Made, and behold it was Very Good: which *Valde* and the Emphatical Addition therof plainly shews another Entity and Bonity of Universal Nature, Subsisting in all the Particular Natures besides their Particular Entitys and Bonitys, which were before declared: And this is the Law and Order and Oeconomy of the whole Houshold and Family of Nature, which indeed is Nature, and was thus Settled and Fixed in the whole Series and Course therof, and so still Continued by virtue of the Divine Benediction in all Successive Generation and Corruption; as the Psalmist saith, *He Commanded and they were Created, He hath Stablished them for ever and ever, He hath made a Decree which shall not pass*: whereby all things are thus Constituted and United into one great *Compositum* of the Univers, wherein they are all either Coordinate, and Inservient, or Subordinate, and Subservient one unto another. And particularly this whole Visible World unto Man, as I shall shew heerafter, and Men and Angels Immediately unto God, the Author, and End, of the whole Creation.

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SECTION VII.

## SECTION VII.

And God said, Let there be Light; and there was Light. And God saw the Light that it was Good. And God Divided the Light from the Darknes. And God called the Light Day, and the Darknes he called Night. And the Evening and the Morning were the First Day.

## EXPLICATION.

God Produced out of the *Æther* the Proper Qualitys thereof, and particularly Light, whereby it was Perfected, and which was the Goodnes thereof, Conformable to the Divine Wisdom and Will of the Creator, and Law of Creation. And he made Diurnal Light to be in one Hemisphere of the *Æther*, which was Divided from Nocturnal Darknes in the other, And so made Day and Night Artificial. And the Evening which Commenced from the Beginning, and the Morning of Diurnal Light, were together the First Day Natural.

## ILLUSTRATION.

1. Of *Æther*. 2. Of Heat. 3. Of Light. 4. Of Color.  
5. Of Day and Night. 6. Of the Goodnes of the works of the First Day.

I. **H**AVING before discovered and declared the General System of Nature, I shall now more Particularly discours of the several Kinds of Creatures as they were in the Six Days; whereof



wherof *Æther* is the First (being that Firmament of Heaven mentioned in the Fourth Day, and so made before) which is Supreme of all the Elements, and next to Superæther (which is Superelementary, as I have said, and probably was Perfected when it was Created in the Beginning) and yet *Æther* hath been esteemed to be the very Highest and Utmost Sphere of the whole World by Hea-then, who made it to be their Superæther, or *Calum Dæmoniacum*, wherein they placed all their chief Idols, which were the Planets and Starrs therof; being indeed not only the Highest, but also the the Greatest, and most Glorious, of all Spectable Creatures. And some of their Philolophers induced therunto, or in compliance with the Popular Religion, did not only deny the *Æther* to be Elementary, and Igneous; but also seemed to doubt whether the very Matter therof were Common and Homogeneous with Elementary Matter; as certainly it must be, if it be Matter, (which is one most Common and Homogeneous Substance in itself, and only Diversified according to the several Accidents and Affections therof, that are indeed Common to all Matter) and it must be Matter, otherwise it could not be a Body. And so is also the very Superæther, and all Bodys whatsoever. But the Matter and Body of *Æther* is most Rare of all the Elements, because the Spirit therof doth so Require it, and Cause it to be; and therefore, as I have said, it is Highest of all Elements, though not so Rare as the Superæther, which is therefore the Highest of all Bodys. And so Rarity of Matter, because it hath less Matter in the same Extension, hath therefore some fines and Analogy to a more Spiritual Substance, and is as it were a more Spiritual Body, as more gross Spirits are more Material: and this chief Elementary Spirit of *Æther* requireth a more Rare Matter then the rest, and so also doth Culinary Fire Rarefy, as I shall shew heerafter; but yet, as I have said, the most Rare Matter is Matter, as well as the most Dens, and not Spirit, but of another Different *Classis*. And as the Body therof is very Rare, so also it is very Fluid, though Rarity and Fluidity be not one and the same, more then Density and Consistence; yet as Density is Analogous to Consistence, so is Rarity to Inconsistence or Fluidity. And therefore an Adamantine, Golden, Brazen, or Specular *Æther*, or Planets therein, are rather Poetical, then Philolophical. And whereas *Elibu* saith, *Hast thou with him spread out the Sky, which is strong, and as a molten Looking Glass, or Speculum?*

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The word Sky, also signifieth Upper Clouds in the Original, and if it were to be rendred Sky, might be aswell understood of the Air, which is an *Expansum*, and spread out, as well as Æther; and that very Expansion seems to imply no Consistence in either of them: and the Comparison is not of a Consistent, but a Molten or Fusile *Speculum*, such as Water or the like: Now plainly the Text intendeth the Upper Clouds, wherof the precedent Discours is in the Context, and which being Anhydrous do so Reflect the Light, like such a Molten Looking Glass. And yet Translators render *Expansum* (as it is Originally) Firmament, in favor and compliance with Græcian Philosophy; wheras certainly the Air, which is also termed *Expansum* as well as Æther, is not Solid or Firm. And the Reason assigned why the Æther should be Solid and Firm is more Vain then the *Hypothesis*; which is, becaus it Moves one way, and the Planets therein another way, and therefore there must be Seaven Spheres of them, and an Eighth of the Fixed Starrs, and to these is since added a Ninth, and a Tenth, which must be the *Primum Mobile*, to solv these *Phænomena*. Wheras in the First Day there was only one Circumvolution of the whole Æther, one and the same way, to make Day and Night, and so untill the Fourth Day; and then we do not read of any such Division thereof into Spheres, as of the Disposition of the Water and Earth into a Terraqueous Globe, but only of the Creation of the Starrs. Nor is this Supposition of Æthereal Spheres any Solution of the several Advers Motions; for perhaps the slower Motions of the Fixed Starrs (as they are therefore so termed Comparatively) which are also Advers to the Motion of the Æther may be as several, and then they must also allow as many several Spheres for every one of them, and so for any of the Planetary *Satellites* about another Planet. Also the Circumvolution of them by the *Primum Mobile* must be either by a Corporeal and External Impuls, and then they must Cohere to it like the Circular Spheres of an Onion (which is the usual Comparison) which Cohesion will also make the Circumvolution Conjunct and one and the same way; as if you turn an Onion so about: otherwise if they do not so Cohere, no Motion of the Inferior Spheres will be Caused by the Circumvolution of the Superior or *Primum Mobile*, as if you turn a Wheel about an *Axis* without any Contact; much less can it Move all



the others so many several ways ; Or it must be by some Spiritual *Potentia* which must be either of another Spirit, and so Infinitely ; or of itself, as indeed it is, and then the several Planets and Starrs may also aswell have such several *Potentia* in themselves, as the *Primum Mobile*, and so many several Spheres Moving themselves and their several Planets in them by such several and Advers Motions : Also firmnes or Consistence is a Proper Quality of Earth, as I shall shew hereafter, and not of Æther ; and though the Æther be M<sup>st</sup> with all the other Elements in some small Proportion, yet the Consistence which it hath thereby is very Inconsiderable, and less then of Air, and Water (which yet are Denominated Fluid Bodys, and not Consistent) and is rather like the Terrene Opacity therof, which doth not fix any Color in Æther, nor Reflect like Earth, or Water, though very much Assisted by the vast Profundity therof, which is somewhat Analogous to Opacity, as well as Density ; as may appear by Deep Water which seems more Black, and Specular, then Shallow. The Spirit of Æther is Fire, as the very Name therof doth Import ; which also plainly declareth the common Opinion of the Antient *Gracians* (though they who deny the Thing would also elude the Etymology.) And so the *Persians*, who worshipped the Sun, therefore Consecrated Fire, and used it in their Mysterious Ceremonys. And all Language, both Sacred, and Profane, hath ever stiled the Sun Hot, which all Sense doth likewise attest, (though this also and any thing whatsoever will be evaded by a resolved Error :) and instead therof Fire is placed in a new Invented Sphere or Province, which it must have in Conformity to the great Bodys of the other Elements, and which is termed, *Concavum Luna*, or *Calum Incognitum*. All which Absurditys were only Philosophical Inventions to preserv the Idolatrous Reverence and Religion of Heaven, which is now together with them to be Exploded by Christianity. Nor do I suppose Æthereal and Culinary Fire to be several Elements Generically Different, becaus they have the same Proper Qualities, Heat, Light, and others ; though they may perhaps Differ more Specifically ; becaus Æther hath other Proper Qualities, as Circular Motion, and Influential Virtues, which may not be in the other, or at least not Actually ; as the Elementary Earth hath Magnetical Virtue, which is not Actually in all Terrene Bodys : and there is certainly a greater Mixture of the other Elements in Culinary Fire.

Fire, which renders it more Impure then *Æthereal*. But there is Heat very notably in *Æther*, which is Instrumental in the Rapid Motion therof; for Heat being a most Active Quality is also very Motive; I know not whether any Actual Heat can be without Actual Motion; though Heat be not only Motion, nor Motion Heat, as I shall shew hereafter. And this Motion of *Æthereal* Heat must necessarily be Circular, becaus, as I have shewed, if there be more Motion then the Body Moving can Exercise and Expend Directly, it will Move it Circularly; and *Æther* can not Move any other way; for being more Rare then Air, it will not Move Downward into it, and being more Dens then Superæther, which is also Superelementary and most Heterogeneous, it can not Move Upward into it; but being already in its own Proper Sphere, and Station, it Moves only in it, which must be Circularly; and therefore also it Moves Perpetually, becaus it is Moved by its own Proper *Potentia*, which is alway Actual in itself, and not Corrupted or Obstructed by any other; and it therefore Moves Equally, becaus there is none other Causality to make any Increments or Decrements therof. And it is by a Spiritual Quality in itself which is not to Rest as the Motion of Matter. Nor is it Invaded by the Superæther; and it is Defended from the Ambient Air by that Rapid Motion, which affordeth no Time requisite for the Air to Operate upon it: and therefore it is more Ingenerable, and Incorruptible, then the Inferior Elements, and probably doth not Emitt any of its own Matter: and yet by its Emiffary Rays is itself the greatest Operator of them all, and doth Generate and Corrupt them; and so generally all Superior Elements do most Operate upon the Inferior, and the Inferior less upon the Superior. Nor doth it need any Fuel, becaus it is not continually Incensed, and Extinguished, like Flame, whose Individuality is therefore Varied as Successively as the Fume, but *Æther* hath its own Spiritual *Potentia* always Actual in itself, which is not Corrupted nor Obstructed by any others. But I conceive that the Regularity of the *Æthereal* Circumvolution Exactly in every Day Natural is from a Special Quality which was also Actuated therein in this first Day and so continueth, and is a Natural Motion therof Analogous to the Verticity of the Magnet, whereby it reduceth itself to the Regularity of its Polar Position. And this I collect from the Text, wherein it is said, that God so made Day and Night therein:



and though the Proper *Æthereal* Virtue according to that general Power thereof doth so carry it about with a Perfect Regularity, yet since it hath been Accursed and Blasted as well as Earth for the Sin of Man there are many particular Alterations, Generations, and Corruptions, appearing in it, such as *Macula*, Comets, and the like; as I shall shew heerafter, which plainly prove both that it was Mist with the other Elements, and was a Generated *Compositum* in the first Perfection thereof, and that now it is Imperfect: and yet the Diurnal Motion thereof is still as Regular as before, as well as the constant and Immovable Position of the Earth: and therefore most probably there is some other Special Quality which doth Preserve it in that Regularity, as Verticity doth the Earth and Magnets in their Polar Positions. And as this Element is most Active and Operative, so God, who doth nothing in vain, and is stiled *The God of Order, and not of Confusion*, did therefore first Perfect it, and Produce the Active Qualities thereof, as the Chymical Instruments of Nature, whereby it was first sett on work; and so at last when he shall Dissolve this whole Elementary World, it shall be by Fire, both *Æthereal*, and Culinary, Congregated and Condensated (as before the Fountains of the great Deep were broken up, and also the Cataracts of Heaven opened) and shall thereby again Melt down this whole Inferior Globe, if I may so speak, with a Deluge of Fire, as he did formerly overflow the Terraqueous Globe, with a Deluge of Water; wherof he hath thus farr declared unto us the manner, but not the Time; for *Of that Day and Hour knoweth no Man, no not the Angels in Heaven*; nor may we compute it by any Motions of the Heavenly Bodys, or of any of them; for this Dissolution not being Natural, but Violent, doth therefore attend no Natural Causality, but may be at one Time as well as another.

II. The Spirit of *Æther* being Fire, the most Proper Qualities thereof are apparently Heat, and Light; which are neither one and the same in themselves, nor do Immediately Subsist or Proceed in, or from one another, but both in and from the Substantial Spirit. For apparently one may be Actually without the other, as Heat without Light, in Fume; and if there be not also Light without Heat, as in the Glowworm, and other such Bodys, yet certainly the

the Actual Heat is not Proportionable to the Actual Light thereof: and heer in the Text Light only is Named, and not Heat, though they are partly Synonymous in their Original Etymology, and very Congenerous and Social Qualities in Nature, Proceeding from the same Substantial Spirit. But I can not conceiv Drines, as I have said, to be any Second Quality Proceeding from Heat, nor indeed very Symbolical or Homogeneous with it, but rather another Collateral Quality of Earth, and Indifferent between Heat, and Cold; for Vapors, Oils, and the like, which are very Moist Bodys, are more Inflammable then Salts, and Ashes, which are very Dry, and all Heat doth Melt or prepare for Fusion, which doth Actuate Moisture; wherefore all Consistent Bodys generally are Actually Cold, and Actually Dry, or at least, Indifferent to either Heat, or Cold, to be Actuated in them. But the Proper Action of Heat is to Heat, or Univocally to Generate or Produce Heat out of other Inflammable Bodys; which thereby it doth also Move, becaus as I have said, it requires a most Rare Body, and so when Heat begins to be Actuated, it begins to Rarefy the Body Heated, which being an Expansion thereof, necessarily causeth some Local Motion: and so it Melteth and prepareth for Fusion by Rarefaction, and even Iron Heated doth Swell before it Melt; and in order therunto it doth Convell and Corrode the Parts of the Bodys, as may appear by the Operation of *Aqua fortis* in Dissolution of Meralls: and as it thus Operateth in respect of Corporeal Rarefaction, or Commintion, which is Preparatory therunto, so it is Spiritually Active in itself, and Causeth Motion, as a fitt and Analogous Instrument thereof, aswell as in its own Aether, as I have shewed; though that be probably as Rare as it can Naturally be, becaus it is the most Rare Element, and can not be more Rarefied by any other Elementary Quality, and hath already Produced the greatest Rurity that it can in itself. But though Motion be such a notable Instrument of Heat, as generally it is also of all the Operations of Material Spirits upon the Matter, yet neither Heat nor any others are only Motion, as I have formerly shewed generally, and shall now shew particularly concerning Heat, which is not so much Caused Originally by Motion, as it is a Caus thereof, though the Generator may Generate Heat, which was Potentially before in the Body wherein it is Actuated, by Motion, as I have said, Mediatly, but more Immediately by Rare-



Rarefaction; and its own Æthereal Motion is Caused by its own Natural Heat, and not Heat by Motion: for so Light and Heat were Created in it first, at least in order of Nature, before there was any such Motion or Circumvolution of the Æther, which followed thereupon, and whereby God Divided the Diurnal Light from the Nocturnal Darknes; and so made Day and Night Artificial. Also if Motion be Formaly Heat, and Heat Motion, then Cold which is the Contrary therof must be Rest, and Rest Cold; which it is not; for it doth both Expand Ice, and also Compress Water in the Sealed Weather Glass; and certainly Expansion and Compression are not without Motion, becaus they Vary the Extension, and consequently the Locality of Bodys so Expanded or Compress. Nor are Motion and Rest Contrary Actively, but only Advers Locally; for Rest is not Active, and therefore Motion cannot be Actively Contrary to Rest; as I have shewed: but Heat and Cold are both Active; and Actively Contrary. And if any can suppose that Heat is a Motion one way, and Cold another way, I desire them to assigne the different Local Motions of these, or any other Spiritual Qualitys, which they never yet have done, nor indeed can do, becaus they are no such Motions Naturally. Certainly Heat and Cold, which are most Contrary Qualitys, require answerably Contrary Motions; but as there is no such Contrariety between Rest and Motion, so neither is there in Motion itself, wherof there is only a Local Opposition, as I have said: for Motion is only one and the same Principle, from which no such Active Contrariety can Possibly proceed: though it may be an Indifferent Instrument of Contrary Agents, as of Heat, and Cold. Again, Heat and Cold may be Misd together into one Temperature, which we call *Tepor*, and that is both Hot and Cold, though Misd, and more Remits thereby; whereas Opposite Motions can not be so Misd, for if Heat should be by Local Motion one way, and Cold by it another way (which though not Properly Contrary, yet must be Diametrically Opposite and Advers) then one such Motion must necessarily stay and stop the other, mutually, whereby there should be no Motion at all, and consequently neither Heat nor Cold: and this *Tepor* is, as I have said, *per omnia*, and not only *per minima*, much less by any Imaginary Paraliel, or Meridional Lines, or the like, which yet must Intersect, and thereby also the Moving Parts must stay and stop one another: and I suppose if

Mathe-

Mathematical Philosophers would pleas to reconfyder Local Motion according to Mathematical Rules, they would easily discover the Vanity of any such *Hypotheses*. But as Heat doth thus Cause Motion by Rarefaction, Segregation, Corrosion, and Comminution, of some Parts, so consequently by Condensation, and Congregation of others; and so it is said to Segregate Heterogeneous, and Congregate Homogeneous Parts; becaus, when the whole Body is Rarefied and in Fusion, the Homogeneous Parts Naturally Congregate themselves, and the Heterogeneous are thereby Segregated. And so in making of Salt the Vapors go one way and fly Upward, and thereby the Salt goeth together another way, and Sinks Downward. Also thus though Heat doth Immediately Rarefy, it may Mediatly Condensate; and as it doth Immediately Melt, so also Mediatly Conspicate; as by Rarefying the Water, and Melting it more into Vapor, it Condensates and Conspicates the Salt, and more notably in Syrups, Tarr, and the like, which will be boiled into a Gumm, or Pitch, or into a Consistence beyond them. And so it may have many other such Collateral and Consequential Operations and Effects. But there is not only Heat Inherent in the Igneous Body; for plainly it heats at a very great distance, which must be by Heat Emanant, becaus all Operation is by Contact; for as there is no Vacuity between Entitys, so neither in Operations, between the Operator and Operated: and that there is such Emanation both of Heat and Light I shall plainly shew heerafter, and also now observ, that there is another wonderfull Property of Emanant Heat, which is Attraction, and this is indeed the chief End of the Emanation therof, by which it doth not only heat at a distance, but also draw other Bodys to it, whereby it may more neerly and more strongly Operate upon them by its Inherent Quality from which the Emanant floweth forth, as I shall also plainly shew heerafter concerning Electricity. And such an Attractive Heat is that which is called Vital, whereby Animals Nourish themselves, Attracting their *Fomes*, or *Materia Nutritiva*, by this Heat, and then Firming, Concocting, Congregating, Segregating, and Exercising all the other Properties therof in order to their Nutrition. Also to this purpose there is a double Power, or rather several Degrees of Heat, wherof one is Calefactive, and more Moderate, and Temperate, which Generates, Nourishes and Fosters, as the *Tepor* of



the Spring, Incubation of Fowls, and the like; and the other Cautike, and more Intens and Torrid; which Corrupts, Destroys, and Burns, as in all *Incendia*. But certainly Heat itself is Generated only by Production out of Potentiality into Actuality, as I have said, either Univocally by Fire alone; as when Wood burns in the Fire, and the like; or Equivocally, which may be by many other Equivocal Causes, whereby the Potential Heat may be freed and delivered out of its *Chaos*, and Prison of Potentiality. And so it is Generated by Motion, as by Collision of a Flint and Steel, or by rubbing of Firecanes, wherein one may smell the Fire before any such Collision or rubbing, which was ready to break forth, and is freed by such Commotion, and the Fiery Vapors or Corpuscles thereby discharged; and so by Contrition, as Coachwheels will sometimes be fired; and generally all Terrene Bodies Rubbed do heat, because, as Earth hath the greatest and grossest Mixture with all the other Elements, so it hath commonly a notable Portion of Fire in it. And it plainly appears that the Motion is only Instrumental herein, because other things do thus also Equivocally Generate Heat; as Water cast upon Quick-lime, and Vapor in Thunder-clouds, Hay-stacks, and the like: and it likewise appears that they do only thus Equivocally and Instrumentally Generate or Produce it, because the Flame thereof afterward will be Extinguished by Water, or blown out by Motion like any other Fire. Nor may we wonder much at the large quantity of Fiery Flame which is thus Produced out of a little Wood, or Gunpowder, or the like, when we consider the great Rarefaction of Water into Vapor, and the Vapor of Fume, which Incensed is Flame, is yet more Rarefied; as may appear by the very quick and direct Ascent thereof, while it is in Flame, through the Ambient Air; whereas afterwards it Ascends more slowly and in rowling Volumes, or *Cincinnati* of Smoak. And indeed we hardly perceive or can conceive how suddenly the Individual Flame passeth away, and is Altered and Renovated. Certainly *Ignes Fatui*, *Stellæ Cadentes*, and the like, Continue much longer in their Individuality; which is through their more Temperate and Generative Heat, whereas the Fire of Flame is more Cautike and Corruptive, and both Generates and Corrupts so suddenly. But Fire in Iron Candent (which is not Iron and Fire Individually several, nor Fire only in the Pores of the Iron, as hath been supposed any more than in Fume) for so

Glass

Glass which is Imporous will also be Candent; but, as I have said, the Fire wherewith the Earth of the Iron is Mist, and which was before in it Potentially, being now Actuated, doth Appear and Operate in it; and becaus it doth Emitt none or very little of the Fiery Vapor or Fume, therefore doth not Flame, or very little, and so reteineth the same Individual Fire Actually in itself much longer; which may be so Actuated in it again, and again; becaus the Fire therof is more fixed in the Mistion, and less Volatile: wheras if a very strong Coal, as of the best Oak, or Birch, or the like, be Incensed and Inflamed very long in a Furnace, (which it will endure and yet come out Whole and Firm) though it may be made Candent again, yet it will not so kindle nor burn afterward, as it did before the Fiery Vapor therof was Emitted and Volatilised. And wheras some have Projected to make Fire Perpetual, I esteem it Possible if the same Individual Fire could alway be continued in A Quality in the same Body, as in Iron, or Gold, or the like (as it is in the Sun, and Æthereal Bodys) but not Practicable (otherwise then as in our new Iron Harths, which do not only Reflect, but also add the Actual Heat of the Iron;) becaus the other Elements, which are Predominant in the Mistion therof, and Ambient about it, do always Oppugn it, and though, while it is in Act, it doth notably prevail against them all, yet at length they Overcome and Extinguish it by their Density, or Cold; and if Nature had not armed them all against it, there would be a present Conflagration of them. And so Perpetual Fire would make a Perpetual Motion, which is Possible, and not only Actual in Æther, but also in Water, and yet not found to be Practicable by Art. Also Fire is Corrupted by its own Vehemence; for by Rarefying the Body wherin it is, it Dilates and weakens itself; and lieth more open to the Air, which thereby hath greater Advantage, and Power over it, nor indeed can any of these Contrary Qualitys Exist in their utmost Intension and Extremity, which is contrary to the Common Law of Nature, and their own Particular Nature is to be Mist in Contemperature, or at least to Oppugn others; and if either that Mistion, or Combat ceaseth, their Activity also ceaseth; and so they return into their Potentiality, as I have before shewed. But Fire as it is a Hott Spirit may be overcome with Cold, as Flame by the Ambient Air; and as it requireth a Rare Body, so it is Opprest or Choaked by more Dens Bodys, as Water, which doth not Extinguish Fire by Cold,



(though it hath some Actual Cold in it) so much as by the Fluid Density thereof, which Insinuateth into, and Invadeth all the Fiery Body; and so Water Actually Heated will quench Fire as well as Actually Cold; for that Actual Cold is very soon & easily overcome by the Fire: and Warm Water is somewhat more Rare Vaporous and Insinuitive, and by the Actual Heat the Fiery Body is more opened unto it (as Univocal Spirits do generally open their Bodys one unto another) whereby it doth as well or better prevail against it then Cold Water. Also warm Liquors Tinge or Dy better then Cold by their Insinuation, but Clammy, as Milk, and the like do most notably Suffocate Fire, yet if the Fire be not by such Insinuation Penetrated, but only covered with some Continuous Bodys it will not be Suffocated, because its own Body is the same, and not Altered thereby; and therefore Iron Candent in a Box continues hott almost as long as it would out of it, whereas Flame which is only a Fery Vapor is soon putt out by an Extinguisher; which returns the Vapor upon itself, and so stifles the Flame: And if Coals of Fire be covered with some Ashes, the Fire in the Body so covered doth long continue, though the Flame Emitted be presently Extinguished thereby. And therefore it is to be observed, that as Fume is a Niggard, because it is not Incensed, so Flame which is so continually Emitted, is a great Waster of Fuel, and of the Actual Heat thereof, which still passeth way; and because it Ascends, doth less Diffuse the Heat, but is therefore fitter for Boiling; for it being a Fluid and Subtile Vapor, doth embrace other Bodys with the Inherent Heat thereof, which is much stronger then Emanant Proportionably, and by such Insinuitive Penetration is doth better Melt Brasse, and such other Metalls, that are more Penetrable by it, and more easily Fusible in themselves; whereas Iron is so Robust Contumacious and Consistent in itself, that it doth not yield much to Flame, but is to be Melted by the Contact of Inherent Fire of Charcoal, and the like. Again, if Fire can overcome its Enemy wholly, then it is more Augmented by the Potential Fire thereof, which it Univocally Generateth and Produceth also into the same Actuality with itself; as Water cast in a small Proportion upon a very Ardent Fire doth increase it, and Assist it (as Smiths commonly find by such Practice) and I suppose Fire may be made so Intens, as to burn and spend the very Fume and Fuligo of the Fuel. Also there is apparently an *Antiperistasis* between

tween such Contrary Qualitys (though some pleas to deny it by a greater *Antiperistasis* of Contradiction) which doth Excite them mutually, but especially the Victor, which is commonly Fire; and this is the very Nature of their Contrariety, which, as I have said, *Marcet sine Adversario*, and the Conqueror is both Continued in his Actuality, and Increased in his Activity, by the Combat. And that I may not seem to speak Metaphorically; I shall plainly shew that there is Really such an Intentional Conflict in these Inferior Natures, though neither Sensitive, nor Intellectual in themselves. For thus is this Combat between Heat and Cold Managed, as it were, in a formed Battell; wherein first they draw out their Forces to their Frontiers, not only their Emanant, but also their Inherent Powers, and not Circumferentially after their ordinary manner, but Purposely and Directly, to that Part, and toward that Point, where the greatest Opposition is; and whereas otherwise their greatest Power is generally in their Center, where it may best Unite and Fortify itself, (for the same Politike Reason to Preserve and Defend itself) it doth now Issue forth to the very Confines of its own Body, and there Encounter the Contrary Quality which would destroy it. As in a Boiling Pott the Bottom thereof which is next to the Fire is most Cold, so as you may safely feel it with your Hand; and so it is observed that the Vital Heat is Internally greater in Winter then in Summer: for Contrary Qualitys not Melt but Actuated in several Substances do thus Resist one another, as Homogeneous Qualitys do Evoke and open their Bodys one to another, and are more ready to Unite and Combine together. And where one Contrary Quality doth begin to prevail against the other, that Retreateth back again to its Center where it is strongest, as Heat to the Stomack. And so in Vessels of Beer frozen, and, as some say of Sack. But if one prevail so far against the other as to Rout and Profligate it, then it flies away in Vapor, or such Fugitive Corpuscles fit to retain it as in Flames, and Dissolutions, and the like. Now whereas it is said that the Motion of Fire is upward toward its own Element, though it be true that generally it is so, yet I do not conceive that to be the Reason thereof, because Local Motion Upward, or Downward, is Immediately of the Matter and Body, and not of the Spirit; and therefore Aether is Uppermost, because it hath a most Rare Body, and so Flame Ascends Upward, because it is Vapor Accended, which



by that Accension is also more Rarefied; and whereas that is Properly Culinary Fire (wherein any other Element may be Predominant in the Mixture thereof) Vapor or Water Rarefied is the most fit Body to retain it in its A Quality; for Air, though as Rare, yet hath a Proper Quality Contrary to Heat, that is Cold, as I shall shew hereafter; whereas the Moisture of Vapor is Indifferent, as I have said, and therefore it exhibiteth a most Lucid and Subtile Fire, and such as is most like to Æthereal: but if the Fire be Actuated in a more Aqueous or Terrene Body it doth, and necessarily must, Descend; and *Aurum Fulminans* Incensed flies every way, with the severall Bodies more Rare, or more Dens, that are Segregated and Dispelled by the Explosion.

III. The other Quality of Æther is Light; which as it is most Glorious in itself, and doth Actuate the Visibilty of all this Spectable World, so by the Spiritual Analogy thereof, it doth not only discover the Nature of other Elementary Qualities, but also of Vegetative and Sensitive Qualities, and the very Substances of Spirits in some respects, Symbolically and Hieroglyphically; so as I can not conceive a fitter representation thereof to Sense than Emanant Light, which is more, as I have said in *Statu Separato* than Inherent, and more Visible than Magnetike Virtue: and though Light be not it self a Substance, but an Accident, yet Accidents are Real Entitys as well as Substances, and have as Real Propertyts, and Real Coextension; which may be, according to their Nature, Analogous to the like Propertyts of Substances. And as Heat is the most Chymical Instrument in Nature, (and therefore some Chymists have stiled themselves Philosophers by Fire) so Light is a most Philosophical Instrument; and a more exact Study of Optike, Dioptrike, and Catoptrike (that is, of Physical rather than Mathematical) might render us Philosophers by Light; wherefore as I recommend the more Curious and particular Inquisition thereof to others; so I shall now generally and occasionally hereafter make some Philosophical Observations thereupon in my ensuing Discourses. But though Light be such a Conspicuous and Considerable Quality, yet I do not therefore suppose it to be any Substance, much less a Body, or having any Corporeity in itself; and shall prove it to be no more a Corporeal Substance than Heat; and yet I do not remember that ever any hath affirmed Heat to be

be any such Substance, though Heat and Light be very Homogeneous and Analogous, and which is yet more strange, not Inherent Light, but only Emanant is thus esteemed Corporeal, though Inherent be far more like to such a Substance than Emanant: but because Inherent is already in a Body, we look upon it and the Body in Gross, and so take them both together; whereas Emanant is Emitted out of the Body, and is not Inherent in any other Body, and therefore some suppose it to be a Bodily Substance in itself; because they do not distinguish between Substances, and Accidents, whose Difference nothing can more discover unto us than this Emanant Quality, which is so far Different from the Substance that it is even Locally Separated from it, though Originally and Continually Radicated and Subsisting in it. I have already shewed that the whole Work of the Six Days was no Creation of any new Elementary Entitys, either Substances, or Accidents, but only a Production of Substantial *Composita*, or of the Actualities of Accidents out of their Potentialities; and such, & none other, was this Production of Light in the First Day, as I have also more particularly shewed in my former Enumeration of all the Six Days Works: whereas the Substantial *Æther* was one of the Heavens expressly mentioned to have been Created in the Beginning, and so the Air was another, and both were then totally Dark, and afterward Illuminated by this Production of Light out of Darknes, as a Lamp is now Lighted by Successive Generation, or Production of Light, as an Accident out of the Potentiality thereof into Actuality; which also declareth the Original Generation thereof to have been none other; though Incension seem to be as like to a Creation, and Extinction to Annihilation, as any other Instances I know in Nature. Also the first Light was only Inherent in the *Æther*, or Emanant from that Part thereof wherein it was Inherent into other parts of it, but not into the Air which was not yet Expanded or made Diaphanous and fitt to Transmitt it, still in the *Chaos* of itself as well as Water, and Earth, untill the Second Day: for if the Light, then also the Heat of *Æther*, should have been Emanant into it, and that should have been Transmitted to the Water, and so caused the Vapors to Ascend in the First Day; which plainly was not, untill the Second Day. Wherefore if this Light were a Substance in the Air and Water, and not only an Emanant Quality, flowing from the Inherent Light of *Æther*, then either God must have Created more parts  
of



of that Luminous Substance in the Air and Water in the Second and Third Days, which is False; or Produce it out of them as he did before out of *Æther*: and so we must affirm the Air and Water to be Inherently Luminous in themselves, which they are not; otherwise there should be no Day and Night Artificial in them, as there is; or they must produce out of themselves a new Substance, which was not in them before, that is, Create it, which is Impossible: wherefore it must necessarily be only such an Emanant Quality of *Æther*, as I have declared of the Inherent *Æthereal* Light Produced in the First Day, and then flowing into other Parts of the *Æther*, which was Prepared and Perfected in the First Day, and afterward into the Air and Water in the Second and Third Day, when they were Prepared and Perfected, and thereby made Diaphanous and the Obstruction of their Informity and Inanity removed. And the very maner and way of Emanation, being a Transition Locally from the Inherent Quality, which is Locally in the Substance, into the Diaphanous Body, which is Locally Distant from it, doth plainly prove it to be an Accident, or Accidental Quality both Really and Locally Different from the Inherent Light, and also from the Lucid Substance; because it is Originally and Continually Radicated in the Inherent Light Immediately, and Mediatly in the Lucid Substance, wherein it doth Subsist and not in the Diaphanous Body, into which it is Emanant; nor is it any Part thereof, nor Mist, or in any kind Congenerous with it, which doth plainly shew Emanant Light, and all other such Emanant things not only to be Accidents, and of an Inferior and Different Nature from Substances, but also from Inherent Qualities; for though Emanant Qualities do Spiritually according to their Spiritual Nature Subsist in their Lucid Substance by the Mediation of their Inherent Qualities, yet Coextensively and Locally they Exist in the Diaphanous Body; wherein they do not so Subsist, as in the Lucid Body, neither do they so Subsist in themselves, but are Instantly Removed with the Lucid Body; wherefore they are neither Substances in themselves, nor Mist with the Diaphanous Body wherein they Locally are, but do not Spiritually Subsist. And conformable heerunto are all the *Phænomena* and Sensible Experiments of Emanant Light, for so it is Moved and Altered in the very Locality thereof according to any Local Alteration of the Inherent Light, and Lucid Substance, and not according to any

Local

Local Alteration of the Diaphanous Body; though it be Locally in it, as an *Abi*, only Definitively, that is, where it is, and in so much thereof as it is, and not elsewhere, nor in any more Place then it is; but not Circumscriptively, and much less Subsistentially, as it is in the Lucid Body, to which nothing doth Unite it, but such a Spiritual Subsistence therein. And this Locality thereof in another Body Coextensively doth Sensibly represent the Coextension of Spirits in Matter. And as it is never Actually in the Inherent Quality of Light or Substance of the Lucid Body, because it is Emanant out of them both, so it is never Potentially in the Diaphanous Body, as it is such, because as such it is only Diaphanous or fit to Receive it into itself, as Matter doth Spirits; (which it may also represent unto us.) And itself is sometimes Actually, and sometimes Potentially, Produced and Reduced by a most Momentaneous Generation, for if the Lucid Body be in a Diaphanous Body, the Emanant Light will be as Actual as the Inherent; and if it be Obnubilated with an Opacous Body, it is in the same Moment Reduced to Potentiality, which also sensibly discovereth Actuality and Potentiality. And so in a Moment it passeth from Heaven to Earth, though I do not affirm, or conceive, that Motion to be Instantaneous which is through so vast a Space, (whereas no Motion can be through any Space or Extension, which hath Part beyond Part, though it be never so little, Properly in an Instant; because it is from one Part or Term to another; as I have said) yet it is so Momentaneous, that to us it is as it were Instantaneous, so as no Mathematical Science, or Human Wit whatsoever, can perceive, and assigne any Difference: and yet we must acknowledge that it is vastly Different in itself, which is also another very wonderfull Contemplation, if it be Curiously considered, and may well be Reposited among the other Mathematical Mysteries which I have formerly mentioned. Certainly there is not, nor Possibly can be, any Physical Discrimination or Dissolution thereof, as of a Body or Bodily Substance; for it is Impossible by any other the quickest Motion in Nature of any Opacous Body Interposed to cutt off any Part of a Ray, or to prevent the Reflection thereof; which also Sensibly proves it not only to be no Corporeal Substance, but of another Nature farr Different from it, and also Different from Inherent Light, for it doth not thereby Return or Recoil into it, but Reflect itself, and continue still in its Actual Emanation, though in another way, to preserve it-



self in its own Different Actuality, as every thing Naturally doth ; and this also shews the Specificall Oeconomy of such Different Natures : and that Accidents can not be Annihilated more then Substances, or Matter itself : (and consequently not Created) and therefore a Ray of Light can not Possibly be Dissected, for then it neither Subsisting Actually, nor Potentially, in the Diaphanous Body, wherein it doth Locally Exist ; but in the Inherent Light and Lucid Substance, as I have said, if it could be Dissected and cutt off from them, it could neither Subsist in itself, nor in the Diaphanous or Lucid Body, nor in any other, Actually nor Potentially, nor in any manner whatsoever, and so should not only Vanish or Disappear to us, but totally Perish, and not be any thing, either Actually, or Potentially, or in any manner whatsoever, and consequently be Annihilated : whereas if the Inherent Light be Obnubilated it returns into it, and into its Potentiality therein, out of which it will as suddenly proceed and flow forth again into Actuality, when the Obstruction is removed : or if the Inherent Light be Extinct, it also is Reduced thereby into its Potentiality, as well as Emanant Light, and so both into their Potentialitys in the Substantial Spirit, wherein their Accidental Essences do Originally Subsist ; nor doth either Inherent or Emanant Light add any Material Density or Gravity to the Lucid Body, for no Spiritual Qualitys though never so much Conspissated Spiritually (and though as I have said such Spiritual Conspissation be Analogous to Material Condensation) do add any Gravity to the Body ; as an Iron Candent which is very Fervid and Lucid, yet is not Heavier then when it is Cold ; nor is the Air, unless it be also Condensated in the very Body therof, more Grave by Night then by Day, or in Summer then in Winter : and therefore Planets do not fall through Æther, though they have more Inherent Heat and Light : Much less is any Body Heavier when it hath more Heat and Light Emanant in it : and the same may be Curiously tried by any Opacous Body poised in Water, which will not rise by any sudden admission of the greatest or most Spiis Light into the Water, though it will afterward Sink by Heat, which is not becaus the Heat doth Levitate, or Light Gravitate, the Water, by Impregnating it with any more Rare, or Dens, Matter in themselves ; but Heat doth Spiritually Rarefy the Water itself, and so consequentially Levitate it, whereas Light doth neither Levitate,

nor

nor Gravitate it: and yet if it were Matter Impregnating the Water, or Penetrating the supposed Pores of any Diaphanous Body, it should thereby Gravitate; but indeed there is no such Penetration of Pores by Emanant Light; which certainly is not a Body, because though it be not Milt with it, yet it Penetrateth the very Diaphanous Body itself *per omnia Puncta*, for turn an Equally Diaphanous Globule against the Light which way you please, it will be Equally as Diaphanous one way as another; which could not be if the Rays did pass only through Pores, as some suppose; unless we should also suppose it to be all Pores, and consequently no such Globulous Body. Also this is most apparently contrary to all the Laws of Refraction, which are always in Direct Lines from one Point to another within the Diaphanous Body itself, and by most Regular Inflections, as I shall shew hereafter, and not through any such Porous *Meanders* and Diverticles: and indeed Diaphanous Bodys, as *Aether* itself, through which the Sun doth Eradiate, are of all others least Porous; and if the Light did only Penetrate through some more Rare Matter in these Pores, then that being therefore Diaphanous, it must Penetrate through the very Bodily Matter thereof, which no Body can do, or through other Pores of that Porous Matter, and so Infinitely, as I have shewed, or through Interspersed Vacuities, which is as Impossible as the other; and if it were Possible, yet it should be no Diaphaneity, but only a plain Phaneity; as when we look through a Sive, or Silk, we do not therefore say that the Sive or Silk is Diaphanous, as the Air; and the Air could not be so Totally Diaphanous as it is, unless it were a Diaphanous Body throughout in the whole, and not only in the Pores thereof. And as several Specificall Qualities may be in the same Place *per omnia*, as Heat, and Light, so also several Individual Lights Emanant, which must necessarily Differ Individually; because they Subsist in several Lights Inherent, to which they belong, and to their several Lucid Bodys, and which doth also appear by the several Shadows that they cast, which being several Privatives, do evidently prove the Positives to be several. So if the fower Walls of a Room be painted with fower several Colors, Black, White, Blew, and Yellow, though the Rays of Light Reflected from them Penetrate one another *per omnia*, because they fill the whole Room, whereby the several Colors may be seen in every Point thereof, yet we see them several and Distinct, and not



Mist or Confounded, By all which it plainly appears that Local Union *per omnia* is no Perfect Generative Motion, and much less Aggregation. Also when Rays Intersect one another in the same Point, and are Decussated and Inverted, yet being afterward Reflected, whereby they become Objective to the Sight, they represent their several Colors Inverted. But if they be Colorate themselves, being Tinged by passing through several Painted Glasses, and be so Reflected Objectively in their Local Union, they represent a Mist Color, as I have formerly shewed; though that be only a Local, and no Perfect Union; because they are still several Individuals belonging to their Individually several Inherent Qualities, and Substances; and therefore are not United into one Proper or Perfect *Compositum*, but only become Objectively such to the Sight; and when the Rays of Light are Incolorous themselves, because they are not Objective, but Vehicular, as in the whole Room, though they be then also Locally United, yet they do not represent any Mist Color, but their several Colors, otherwise we could not see them Distinctly: and the Image thereof will never be so Confounded in the *Focus* by such their Intersection, but that being Reflected they still appear several. And thus as Light, and other Spiritual Qualities, so also several Spirits or Spiritual Substances may be together in the same Place, and Penetrate one another *per omnia*, as well as they do the Matter in Consubstantiation; because, as I have said, they are only in such an *ubi* Definitively, which is Common to them all, and not Proper to any of them, as Circumscriptive Extension is to the Matter; but therefore several Bodys Unmist, and of several Extensions can not Possibly be in the same Place; which, as I have before observed, is one of the grand Differences between Bodys and their Extension, and Spirits and their Spiritual Qualities, and the Coextension thereof, and doth plainly prove Emanant Light to be such a Spiritual Quality; because apparently Several Lights are in the same *ubi*, whereas Bodys can not so be therein. And so also the Motion thereof is not only Different, but Advers to that of the Matter, which is from the Circumference to the Center, whereas this is most evidently from the Center to the Circumference, otherwise it should not be Emanant. And now I shall farther discours of the Emanation, Transfusion, and Retreat of Light, which are all such Spiritual Motions, as shall plainly discover them to be far Different from the  
Motions

Motions of Matter, or any Affections therof, and also most wonderfull in their own Spiritual Nature. And first, the Emanation therof is very Considerable and Admirable, as I have before described it, Subsisting in one Substance, and Existing in another, and heerein more Admirable then the very Inherent Light, which doth Immediately Subsist in the same Substantial Spirit therof, and doth Exist alway Locally with it in the same Body: but becaus these most Active and Energetical Qualitys of the first and most excellent Element, Heat, and Light, are thus Originally Inherent and Confined to the Body of their Substantial Spirit, and no Operation can be at any Distance, but only by Immediate Contact of Substances, or Qualitys; therefore they are Armed and Instructed with these Emissarys, which they send forth through all their Sphere of Activity, which perhaps may be as large as the whole Elementary Globe, but as the Inherent Qualitys are strongest in their own Center, wherein they are most United; so they are the Centers of Emanant, from which they proceed, and wherunto they return again; and these Emanant Qualitys are Proportionably Stronger, or Weaker, as they are neerer, or farther from the Inherent Qualitys: but in the very Confines between them both, and from which they are first Emanant, they are much Weaker, then Inherent, which Subsist Immediately in the Spirit, and these in them. As suppose an Iron Candent Equilateraly Triangular, wherof the Center is Exactly that Point which is also the Center of a Circle Circumscribed about such a Triangle, in a third part of the Perpendicular Line, above the *Base*; yet if you touch the Candent Iron at any Angle it shall Burn more, then if you place your Finger in any middle Point of the Circle, so Circumscribed between the Angles; though all the Points of a Circle be Equidistant from the Center, becaus at the Angles you feel the Inherent Quality of the Candent Iron itself, and in the other Points only the Emanant Quality therof. Also I must observ that though we call these Emanations, Eradiations, and so describe them by Rays or *Radii*, or as the Poets stile them *Spicula*, or *Crines*, as so many several Darts, or as the Spokes of a Wheel, or Hairs of an Head, Discontinued between themselves more and more as they proceed farther from the Nave, or Skull, though Originally Continued in the Root of them all, that is, in the Inherent Quality (and so I shall make use of this Common Term) yet Properly there are



no such several Rays thereof, nor are they at all Discontinued; but fill their whole Sphere Continuously and Completely in every Part and Point thereof, and we only Metaphorically fancy and describe them by such an Eradiation, as we Mathematically in a Continuous Extension Imagin Lines passing from one and the same Center to every Point of the Circumference, which are Indefinite and Innumerable, and therefore it can not Really be so in Nature, unles an Unit and Number almost Innumerable should be Equal, which is Contradictory, as I have shewed. But as they are only Extension, so the true Emanation is not any such Eradiation, but one Continuous Flux from the Inherent Quality through the whole Sphere unto the Circumference thereof. And I suppose it to be a Perfect Sphere alway, though not Equally, Lucid, and that it is not any Spheroid, although the Lucid Body may be of any other Figure, as the Triangular Iron Candent, and the like; and so it seemeth that the *Halo* of a Candle in a Mist or Foggy Vapor is Orbicular, though the Flame be Pyramidal; which therefore Painters so represent; as also the *Halo* about the Head of a *Divm*. But this *Halo* about a Candle, and Barr about the Moon, and the like, are as it were middle Spheres between the Inherent Light and Utmost Sphere of the Emanant Light, Caused by the Obstruction and Partial Repercussion from the Mists and Fogs about the Luminary, whereby the Rays are partly Reflected which make the *Halo*, and Partly Transmitted (at in a Comet) which make the Utmost Sphere of the Activity thereof. Yet these Imaginary Radii of Emanant Light are as Direct Lines, as the Imaginary Lines of a Mathematical Circle from the Center to the Circumference: and if they be Interrupted or Offended by any other Body Refracting or Reflecting them, as often as they are so Interrupted or Offended, they are Inflected and also pass from any such point of Inflection to another in Direct Lines. And that which so Interrupteth and Offendeth their Emanation is something Contrary therunto, as Cold is Contrary to Heat: and that can be no Privative, as Darknes which Light alway overcomes; for such Contrariety is between Positives; nor any thing which is not Active in itself, as Density, or any other Affection of the Matter, which as they are not thus Actively Contrary to Heat, so neither to Light, or to any other Spiritual Qualitys whatsoever, though according to the Universal Polity and Consociation of Nature,

ture, they may be more or less Symbolical, or Asymbolical. And particularly Density is thus a Symbolical Affection of the Matter with that which is Contrary to Light, as Rarity is with it, and other Qualitys of Æther; which, as I have said, requireth a very Rare Body: and so Density is a Corporeal Affection Requisite and Analogous to the one, and Rarity to the other: but as there may be less Inherent Light in a more Rare Body then in a more Dens; as in the Flame of Spirit of Wine, then of Pitch, which certainly is a more Dens and Fuliginous Fume, then the other; so more of Emanant Light in a more Dens Body; as Glass is more Diaphanous then thick Water through which it will sink, and yet is more Opacous. Wherefore there is something besides Density that is Contrary to Light, which hath been well observed by others, and acquired a Name whereby it may be known, and is called Opacity, which is a Quality of Earth; as I shall shew heerafter. And this is one of the other Qualitys of the Elements, besides those commonly called the Fower First Qualitys, which are to be Consydered and Regarded by Philosophers, as well as them; and as we may not Invent any new fictitious Qualitys, which God hath not Created, so neither may we lose any of them which he hath made to be in Nature, nor Confound any Simple Qualitys with Compound, nor Compound with Simple, which God Created in the Begining before there was any such Composition: and though indeed *Entia non sunt multiplicanda sine Necessitate*, yet whatsoever God hath Created Necessarily is, becaus he hath Created it, and therefore it is; and whatsoever is, is Necessarily while it is, and none can Annihilate the Entity therof, by any Finite Power of Nature, and much less by Opinion and Fausy. For at it is said of the Divine Word, so we must also Consyder and Discours of the World as it is; and none can Add to it, or Diminish from it. And God in his Infinite Wisdom did so Create the Heavens and the Earth in the Begining with all their Various Furniture of several Simple Essences, becaus as it is his Infinite Perfection to be One in Himself, so it is also the Perfection of Finite Nature to be Many in One, whereby all the Various Perfections therof are Variously Expressed, which could not be only by One. Wherefore I shall sett the same Bound to my self, which God himself hath sett in Nature, neither to go beyond the Begining of the World, nor any thing which he Created therein, nor to fall short therof, or

fear



fear to affirm these Original Entitys to be such, becaus God who is the First Caus hath so Created them, without seeking any farther Caus or Reason therof; or to deny any Natural Mitions or Compositions to be any such Simple Principles or Original Essences though he hath also joined them together, with others, so that we can not sett them asunder Localy by any Chymical Separation. And such an Original Quality I find expressly Light to have been, Produced into Actuality in the First Day, which lay hid before in the Dark *Chaos* of Potentiality; and by the same Reason I know that Opacity was also Produced together with Light, and Mist with it in the Mition of *Æther*, with Earth, as well as with the other Elements: becaus there is neither *Pura Lux*, nor *Pura Tenebra* Actually in Nature, neither can I conceiv that any such Actual Qualitys can Exist Naturally in their greatest Intension and Extremity; and therefore probably might not so Actually Exist in the *Chaos*, before their Mition, and Contemperation, which seems to be as Necessary to their Existence, as the present Mitions of the fower Elements, according to the first Works of God in the Six Days, and Original Institution and Law of Generation, and so must continue as long as any Successive Generation and Corruption, and present Courf of Nature. And this Opacity is a Terrene Quality, wherunto the Density therof is Assitant; and so Earth itself is most Opatous, and Water less, yet having some Opacity that causeth Refraction, which is a Partial Reflection; and so Air, and *Æther*, and all Diaphanous Bodys; for there is no Pure Diaphaneity without any Opacity. And this Opacity doth not only Reflect, and Refract; but is also Mist with Light in Colors, and in Light itself, which hath some Desultory Color, and is not simply Visible of itself, as I shall shew heerafter: Thus the more fixed Qualitys of Earth do fix the more Agile and Volatile Qualitys of the rest of the Elements, being as an Alloy to Metall which makes it more Malleable. And so particularly is Terrene Opacity to *Æthereal* Light; for as Owls can not see by Daylight, so the strongest Sight could not see the Pure Light, nor can it Exist in its own Simple Vehemence without the Mixture of Opacity. And these Elementary Mitions are the Natural Perfections of the Simple Substances, and Accidents; which do therefore require it, as well as Matter and Material Spirits do Consubstantiation, as I have shewed. Now Diaphaneity being only a less Degree of Opacity as  
Rarity

Rarity is of Density, it is also Partly Opacous, and therefore, as I have said, doth Refract, which is a Partial Reflection, or rather Inflection of the Rays from their own Natural Direction; and there is no Diaphanous Body which doth not Refract more or less, and none that doth Refract, but doth also Reflect. But in all Refraction and Reflection the Perpendicular Rays pass through the Diaphanous Body Perpendicularly, and all Emanations Immediately are Perpendicular, and neither *A Perpendiculo*, nor *Ad Perpendiculum*, as in Refraction, or Reflection; which, as we commonly Intend by those Terms, are always Oblique Lines. Wherefore I suppose that the Rays of any Lucid Body are not so Refracted in the Immediate *Medium* wherein it is, as of the Sun in the *Æther*, or of the Flame of a Candle in the Air; for, as I have said, the Flux or Eradiation of the Rays thereof issues forth Immediately from the Inherent Light in most direct Rays, and so they must Circumferentially every way Penetrate their Immediate *Medium* with all their Rays Directly, and not Obliquely, as well as the Perpendicular Ray doth any Diaphanous Body which doth Refract the rest. But we must also observ, that as Opacity doth caus Refraction and Reflexion of the Rays, so the Density of Diaphanous Bodys doth Ampliate or Distend the Rays of Expansion, whereby it also weakens them: So I conceiv that Refraction and Reflection are, when the Rays having passed their Immediate *Medium*, do meet with another *Medium* of a Diaphanous Body being of Unequal Opacity, as Air is in Respect of *Æther*, and Water of Air, and the like; and as often as the *Medium* is so Varied, there may be so many Inflections of the Rays from every Point of the Variation thereof, as I have said; and according to that Unequal Opacity so is the Refraction, or Reflection, greater, or less. And which is most wonderfull, and truly Spiritual, the Inherent Light is not less Lucid in itself by all the Rays which it doth Emitt; becaus, as I have said, they are Different Entitys in themselves, and when they are Emitted Actually, are only Produced out of their Potentiality in the Inherent Light, wherein they subsist, and from which they flow forth into their Actuality: nor is it more Lucid when they return into it again; becaus they only return from their own Actuality into their own Potentiality. And thus the Inherent Light, having such a *Potentia* of Producing the Emanant Rays thereof, like an Inexhaustible Fountain, doth not only



send them forth to Complete the Sphere of the Activity thereof, but if they be Refracted, or Reflected, or do Converge, or Diverge, or however they be Disordered, yet still fills the Sphere, as before, so far as it is not hindered by any Interposing Opacity. Also even these Emanant Rays have other Secondary Rays Inherent in them, and which they do likewise Emitt to fill the Sphere, as well, and as far as they can, where themselves can not approach; as the *Crepuscula* are such Secondary Rays of the Principal Solar Rays, when they Decline by the Suns setting and sinking beneath the *Horizon*; and so Rays that pass into the *Foramen* of a Dark Room make it more Luminous by their Secondary Rays then otherwise it would be, and without which the Principal Rays themselves could not be seen, though the Secondary are much weaker, and less Lucid; whereby the others, which are notably more Lucid, are seen Objectively. But as I have said the Emanant Rays are never Actual in the Lucid Body, because they are always Emanant in their Actuality, and all the Light in the Lucid Body is Inherent; nor is it Properly any Actual *Nisus* of the Emanant Rays in the Lucid Body to Produce themselves, but of the Inherent Light to Produce and bring them forth, as the Lucid Substance doth the Inherent Light: and therefore Emanant Rays never Intersect, or Penetrate, the Lucid Body in their Emanations, Refractions, or Reflections; because they never Actually Exist in it, for then they should be Inherent. And now I shall discover a farther Mystery of Light Emanant; whereby I shall shew not only how the Motion thereof is far Different from the Motion of Matter, but how it is a Political and Intentional Motion, as I may so term it, Effectively, for the Preservation and Orderly Position of itself. Thus Emanant Rays first pass into their Immediate *Medium* in Direct Lines or Rays Circumferentially, as I have said; and where they are first Interrupted in that Course, and thereby Offended, all the Collateral Rays, so far as they may, without Intersecting their own Lucid Body (which would Reduce them into Potentiality in the Inherent Light), do Incline oneither side to Assist that Perpendicular Ray that is first Interrupted: As if the *Superficies* of any Opacous *Speculum* be Convex, the first Ray that is Interrupted thereby is that which is most Directly Opposite to the *Umbo*, or Summit thereof; because that is the neereft Point of the *Speculum* to the Opposite Lucid Body, and the Collateral Rays

Rays on both sides do therefore Incline thitherward as farr as they may to Assist it ; which is the very Reason why the Image Reflected from such a *Speculum* appears Proportionably less, becaus the Rays by such Inclination do Converge more together ; and if many such *Specula* be placed together in one Table, as Baby Glasses, and the like, there will be as many Images of the same Face ; becaus, as I have said, the Inherent Light doth always Emitt Emanant Rays, enough to fill the Sphere, whether they Converge, or Diverge, or however they be Disturbed or Disordered in their Emanation : and accordingly every one of these Images will be Proportionably less, if the Convexity of the *Specula* be the same, or greater, as they are more, or less Convex. And the farther the Face is drawn back from any such *Speculum*, or the *Speculum* from it, the less Proportionably will the Image appear, according to the Mathematical Proportion of such a Pyramidal Figure, wherof the Face is the *Basis*, and the *Speculum* the Cone: for though the violent Motions of Refraction or Reflection do much vary from Mathematical Rules and the common Motion of Matter, yet the Natural Motion of Emanation from the Lucid Body into the Immediate *Medium*, and after Refraction, or Reflection from Point to Point, is Exactly Mathematical, and the Foundation of Catoptrike, as the other is of Dioptrike. But though the Object and Convex *Speculum* be never so farr Distanced, yet the Image will never be Contracted into a Point, (whereby it should become no Image) becaus the Perpendicular Ray which is Midst, and hath also some Latitude, will alway keep the Collateral Rays asunder ; so that though they Intersect, and Invert themselvs, yet the Perpendicular Ray will alway be Midst: for that is never Refracted, but only Distended. And if the *Speculum* be Concave, then becaus the first Rays which are Interrupted, are they which are next to the *Limbus*, or Brim, therof ; therefore the Collateral Rays every way Incline to Assist them both without, and within it : and so being Reflected back again from the *Limbus* into the Concavity of the *Fundus*, or Bottom, make the Image to be Inverted. And in a *Foramen*, which is as a Concave *Speculum* without any *Fundus* or Bottom beyond it, therefore the Rays not being Reflected from the Sides, but only from the *Limbus*, pass forward toward their own *Focus*, where they Intersect, and are also Inverted by such Decussation therof, and the farther the Object



is drawn back from the *Foramen*, or the *Foramen* from it, the *Focus* is neerer to the *Foramen*, and the Image is less, then when the *Focus* is farther, and the Object and *Foramen* neerer. But it is alway least next to the *Focus*, wheresoever that is. And so also through a *Lens*, or any open Convex Glass. Now this Motion thus Interrupted and Disturbed is not Mathematical, but very divers from it: for if the Base of any Pyramid or *Isoceles* made of Wires Inserted in a *Foramen* be Inlarged by any farther Production therof according to the same Figure, yet the Cone will be where it was before, becaus the Pyramid or *Isoceles* is only Produced from the same Point Contracted; whereas if the Base of the Object be either way Inlarged, the Cone or *Focus* shal still be neerer and neerer to the *Foramen*; and yet the *Foramen* is still the same, and filled with Rays, whether the Base of the Object be farther, or neerer, greater, or less; but when it is farther there are more Rays of the Object Inlarged Proportionably, which Converge more toward the *Limbus* of the *Foramen*, and they being more Inflected thereby Intersect sooner, and neerer to it Proportionably according to the Longinuity, and Length of the Rays; as if the Wires were so Decussated through the *Foramen*, and then were Distended and farther Separated at their other Ends without the *Foramen*, the more they are Distended the sooner they Converge and Intersect within it: Also where there is such Interruption of Body in their Motion; yet their Inflection is not like that of Emanant Rays; nor is it Refracted the same way but farr otherwise; as if a Bullet be shot Obliquely into Water, which doth Divert the Motion therof, it doth Inflect Outwardly *A Perpendicularo*, more, or less, according to the forcible Penetration therof, but never Inwardly or within the same Oblique Line Produced; whereas such Refraction is always Inwardly *Ad Perpendicularum*, more, or less, as the Diaphanous Body doth Refract more, or less; which are Opposite Motions, and Ocularly Declare not only a Difference, but also an Opposition, between these two Motions, and shew the Different Natures of Matter, and Spirits, and of all Material, and Spiritual Accidents and Affections; and there are plain'y as Different Reasons therof: for the Bullet itself is a Body, which tending to the Center is Diverted by the Water, that is another Body of Matter below it, which it cannot Penetrate, and will not be so suddenly Removed, as I have shewed; but doth therefore Inflect it in the Water

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Proportionably, as it would make it to Graze or Reflect in the Air, which is more Rare: whereas Emanant Light being no Body, but a Spiritual and Active Quality, whose Motion is Circumferentially from the Center, and which can Penetrate, and is not hindred by a Diaphanous Body, as it is a Body, but only as it is partly Opacous, (which is another Spiritual Quality Actively Contrary to it) doth not only pass through it, as it is Diaphanous, but as far as it can doth also Decline from its own Motion to Assist any other Rays interrupted by it, (as in the former Examples) toward which accordingly the rest do Converge and Incline as far as they may: and thus Spiritual Qualities can Vary their Motion (which otherwise also is Mathematical) either to Encounter a Contrary Quality, or to Assist one another: and this is from the same Political Principle in Nature of Preserving itself both in its Universal Entity, and in its Specificall Homogeneity, and also in its Individuality; whereby it plainly appears that there is such an Universal Nature, and also such Specificall, and Individual Natures, because there are such Real Unions and Confederacys, and such Real Effects thereof. And thus Emanant Rays are Refracted in Diaphanous, or Reflected by Opacous Bodys; and do Converge, both in Convex, and Concave, *Superficies*, toward the *Umbo* or toward the *Limbus*: and though the Image in one be Erected, and in the other Inverted, yet in both it is Proportionably less; which doth plainly shew the Convergence of the Rays, in the Image: and if the *Superficies* be Lenticular, and not so Orbicular, whereby it is as it were Semi-convex and Semiconcave (as one Bank is also half of the Vally) there may be a double Image Reflected, whereof one shall be Erect, and the other Invers: yet they shall both be Proportionably less, as before: And if the *Speculum* be Plane, it Reflects almost Equally, unless the Lucid Body be Orbicular; as a full Moon, which in a Looking Glass appears somewhat less; because the lowest Ray of her Lucid Orb is somewhat neerer to the *Speculum* then the rest, and therefore first Interrupted. And when the Rays have Penetrated the Diaphanous Body, though they are Refracted according to their Points of Incidence, and Inflection, and are so Directed thereby, yet they pass through it in Direct Lines, as I have said, from Point to Point, untill they meet with something of Different Diaphaneity therein, which as another *Medium* will again Inflect them, and so when they go forth by the other Opposite *Superficies* Convex, Concave, or Plane,



Plane, into another *Medium*, they have another Point of Excidence, as I may so call it, and another Inflection thereby more, or less, as that other *Superficies* is Figured, or the *Medium* is more, or less, Diaphanous: and so they Incline to the Rays first Interrupted, or last Ingaged either in the lower *Umbo* of a Convex, or *Limbus* of a Concave, or Indifferently of a Plane. But if they afterward Intersect, yet the *Focus* will never be a Point; becaus, as I said before of an Image, the Perpendicular Ray doth alway caus some Latitude therof. And this I conceiv to be the Coursof Emanation of Rays of Light, which Naturally is Circumferential, and when it is Interrupted, doth thus Converge as farr as it may, though it be also said to Diverge as in the Concave *Speculum*, becaus the Rays which so Converge to assilt the Interrupted Rays one way, do indeed Diverge from others the other way; and the whole *Limbus* so Interrupting them they so Converge to every Point therof. And now as I have shewed the Motion of Emanant Light to be very Different from Corporeal Motion of Matter, so I shall also shew that any Light is not only Motion, or Puls of the *Diaphanum*, or something of that kind, which others have affirmed it to be, whereby I suppose they Intend also a Corporeal Motion, which I have already disproved; but yet as I have particularly discoursed of the Motion of Heat, so I shall now also of Light; and certainly if Heat be a Motion, and Light also a Motion, they may not be one and the same Motion; for then Heat should be Light, and Light Heat; and so we should not need to argue any farther particularly concerning Light, having argued it already against Heat: but I do acknowledg them to be severall and Different Qualitys of *Aether*, and desire such who affirm them to be Motions to assigne their severall and Different Local Motions, which if they be severall and Different, must Impede and Obstruct one another, as I have said; for Heat and Light are Locally United *per omnia*, and therefore their Local Motions must be also *per omnia*, as a Sunbeam or Flame are very Lucid, and very Hot *per omnia*. And now let any such satisfie themselves how the same Body, in the same Place, and the same Time, can Possibly Move by severall Motions *per omnia Puncta*. Again, if the Motion of Light consydered distinctly by itself be only a Corporeal Puls, then it must be so Impelled by some other Corporeal Mover, and then they must also assigne some particular Motions and Impressions of the Body Moving,

ving, whereby it doth so Impell the Body Moved, as to Generate Light; otherwise any Body that Moves the *Diaphanum* in any maner might, as well as the Sun, thereby Generate Light; and Collision of Icicles should Generate it and Heat, as well as of Flint and Steel. Also let them shew what Connatural Analogy there is between these two very Different Motions of Circulation, and Collision, which yet do both Generate Light. But I suppose I may fully satisfy them with one Consyderation, which is, that the Motion of Emanant Light is so Swift and Momentaneous, that there is no Corporeal Mover in Nature which may Move the *Diaphanum* so swiftly, certainly the Motion of the Sun is Comparatively, as Rest and Sloth in respect therof, and therefore can not Generate Light by his Impulses; becaus the Pulses Caused thereby can not be Swifter then the first Impressions. And though it be true that any Consistent Body, though never so long being Moved in any Part or Point, is Moved in the Whole, almost Instantaneously and Simultaneously, becaus it is Consistent; yet Air, which is the great *Diaphanum* and Vehicle of Light, is not Consistent, but Fluid; and so is *Æther*; as I have before shewed: and a Ship sailing in Water, which is more Consistent then either of them, doth not Move it many Leuks; as a Stone thrown into a Calm Sea will not make Circles therein many Miles: much less can the Circumgyration, or any other Motion of the Sun, Caus such Pulses in all the vast *Æther*, Air, and Water, and wheresoever there is any *Æthereal* Light. Nor doth every Motion of one Body in another make a Commotion and Puls therein: as a most smooth Globe turning round in Air or Water doth not Impell much, nor make any great Friction or Attrition, but only slideth by the Ambient Body; and the more Swiftly it so Moveth, the less Commotion it maketh in any other Body; or as an Intire and Solid Bullet flying in the Air maketh little or no Nois, which is only made by Commotion, as I shall shew heerafter. Wherefore if the Sun thus Move most Swiftly in a Fluid *Æther*, both Circularly, and Progressively, he maketh little or no Commotion or Impuls, (as manifestly he maketh no Sound or Nois by such Motion therein) and certainly none in the Air or Water, wherein yet manifestly there is Light. Again, though the Emanation itself be a Motion in itself, yet it causeth no Continued Commotion in the *Diaphanum*; as when it Moveth through Glass, which is a very Consistent Body, and would easily discover  
any.



any such Motion or Tremor; yet I suppose any such Motion therein by the Irradiation of Light can never be discerned with any Microscope; however certainly when the Motion of Emanation ceaseth, and the Emanant Light hath filled all the Sphere thereof, it Moveth no more but attaineth its Rest; and so is neither Moved itself, nor doth Move the *Diaphanum*, and yet it is Light still, as it was before; and so the Motion thereof is only the very Enanation, which is Instrumental in Diffusing the Light, and Caused by the Spiritual Quality thereof, and not the Light by it, which is another thing, and of another Nature very farr Different from it. Also Light Moveth through a more Dens *Diaphanum* as well as it doth through a more Rare, & is not so Resisted by Density, or Consistence as Bodys are in their Motion, but only by Opacity which is Contrary to it; and that doth Refract or Reflect it as swiftly, and when it is Perpendicularly Reflected back into itself, there is another Motion thereof or Reduplication of itself Directly Opposite to the Emanation in the same Perpendicular Line, and at the same Time *per omnia*, which could not be if it were any such Corporeal Motion; and yet the Light is not Obstructed or stop'd, but very much Augmented, as well as the Heat, by such Reduplication thereof.

IV. Having discovered such a Quality in Nature as Opacity, which is Contrary to Light, though it be not so Conspicuous, and therefore is not so much regarded, but denied or neglected by others, as many such Antiqualitys, as I may so call them, are, because they are not so Agile and Active as their Contrary Qualitys, but are for Contemperation & Fixation thereof; I shall now proceed to consider this Opacity in the Mixture thereof with Light, whereby it doth so Contemper, and Fix it, and whereby also we may very plainly discover it. For as the Mixture of the fower Elements doth Produce so many Various Quintessential *Composita* by the Production and Actuation of perhaps more then fower several Qualitys in every one of them, and Variation of them, and their several Degrees, according to that Arithmetical Rule of Changes, which I formerly mentioned, so particularly the very Mixture of Light and Opacity, and the Various Degrees thereof, Produce many notable Variations. And so not only Color generally is Produced by the general Mixture thereof, but all particular Colors by the particular Variations

Variations therof. And first as I have shewed Light itself could not Exist without some Opacity, and much less be Visible without it, any more then Opacity without Light; and therefore Light Objective and Visible doth always appear in some Color or other, whether it be Direct, as in the Sun, which is a Radiant Yellow, and in the Moon, which is White, and the Æther, which is Blew, or of some such Colors; or Reflex, as in the Rainbow, wherein all those Simple and other Mist Colors do appear; and though Light which is not Objective doth cast a Brightnes, and Darknes a Shadow, and thereby may Intend or Remitt Colors, yet they Cause not any Color, more then Colors them, which yet cast some such Proportionable Brightnes, or Sadnes, as Rooms Painted White, or Black; but the Light of the Sun Reflected from Water is Yellow, and the Moon White, and the Æther Blew, (which also maketh Seas and Hills at a distance in Sude Weather to appear Blewish) though, as I have said, Density and Profundity are also in that Æthereal Blewnes Analogous, and somewhat Assistant, to Terrene Opacity, as Rarity and Tenuity are to the Æthereal Brightnes. But if the Common Light (though that also have some small Mixture of Opacity) were Visible in itself without Opacity, we should see nothing besides it, as we can not well see through Flame which is Objective Light; whereas Light doth render all things Visible, and more Visible by the greater Illustration therof; and so it is said to be *Ætus Diaphani*, rendring it Actually Perspicuous, which was Potentialy such before in itself; and so also it doth Actuate the Visibility of Fixed Colors, but not the Colors themselves which are Fixed by Mixture Internally in themselves; and doth Externally Illustrate them exceedingly by any greater Brightnes therof. But Light passing through Painted Glass is by the Union therewith, and Direct *Species* of the Colors also passing through it, with the Direct Rays of Light, Imperfectly Tinged; as the Yellow and Blew of the two severall Painted Glasses is by the Local Union therof; and such Tinged Rays of Light being Reflected are Visibly Colorous; because they were Tinged before by their Passage and Penetration through the Body of the Diaphanous Glass: and so being Locally United with the Inherent Color of the Glass, the Emanant Color or *Species* and the Light Emanant afterward continues to be so United, whereby the Light becomes Colorous; as when we look through a Painted Glass and Inherent



Color thereof against the Light Transmitted through it, we thereby see the Color most plainly, because that being Inherent is stronger then the Emanant Light; but the Rays of Emanant Light being somewhat stronger then the Emanant Color or *Species* Reflected on a Wall after such Transmission through a Painted Glass Window, we do not perceive the Reflected Colors to be altogether so deep or strong as in the Glass when we look through it. And if the Emanant Light be not Radiant it is not Colourous, or if it be not first United with the Inherent Light in the Coloured Body then it is not Colored at all, as in the Reflection of Light from a Colored Wall: and so also if it be only Reflected from the Outward *Superficies* of the Painted Glass, and not Transmitted through it, so that the Wall or Glass is the Object of our Sight, and the Common Light serveth only to Activate the Visibility thereof, and is not Colourous and Objective in itself, or in its own Rays; and yet if they be Conspissated by passing through a *Foramen* or *Lens*, or by Reflection, or the like, they become more Visible; as *Æther* also is by Profundity: Or if a Glass be Specular, whereby the Emanant Rays of Light and *Species* of Colors Penetrate into the Profundity thereof, and then are Reflected, they become Objective, because the *Superficies* of the Glass doth not Terminate the Sight; and the Emanant Rays and *Species* Penetrating together into it, and being so Reflected from the Opaque *Fundus* thereof are thereby rendered Objective, as if they were Inherent in the *Speculum* Reflexively, as well as they appear Directly Visible when we look through an Incoloured Glass, and see any Colored Object beyond it: and so also in the *Superficies* of any Adiphanous *Speculum*, as Steel or other polished Metall (that doth not Suffocate the Rays by any Unequal Porosity and Scabrities, which doth confound the Image) they are as Visible almost as the *Speculum* itself; and yet also we see the Metall with the Image Reflected; because it is Locally United in the same *Superficies*, which being only of one Color (as Black Marble, Brass, and the like) doth not Confound the Image, but only add a Tincture therunto; whereas if it were first Picturated itself, it would prevail over the Reflected Image, which is only Reflected and not Directly Emanant from the *Superficies* thereof, as its own Colors are, which are therefore more strong and prevalent then it. And the Object doth not appear beyond it, because the Rays do not Penetrate the

the Profundity. And these Local Unions of Light and Opacity, or of Light and Colors, which are partly Opacous, being Spiritually only External though Locally Internal Unions *per omnia*, do not Produce a Perfect Mixture or Generation, as I have shewed, and therefore are Momentary being Locally United in one Moment, which is their Imperfect Generation, and Disunited in another, which is their Corruption. And such is the Momentaneous Generation and Corruption of some Colors which are therefore truly called Desultory, but whereas they are called Apparent, I can also admit it in respect of the general Nature of Color which is to make Objects to Appear at Distance, by the Contact of their Emanant *Species*; and so indeed all Colors may be termed Apparent; but any such Distinction as is by some made between Colors themselves, Real, or Apparent, as though some Colors were not Real, I can not admit; and though some affirm only Fixed Colors to be Real, and others deny even the Reality of them, I must affirm both Fixed and Desultory to be Real, according to my Rule, which I have formerly sett down; and so certainly they are both Really in Nature, and Real Objects of our Sense, and not only in our Mind and Reason; like the Fantastical *Species* of Colors which Melancholike and Madmen do Imagine and Contemplate, and which are the only Apparent Colors that I know (because they are only *Species* and Images thereof and no Real Colors in themselves) unless we also acknowledge all Mankind to be as Fantastical, as some such indeed are, and the Assertors of this Opinion make themselves to be, and none to have any true and Real Sense and Sight: for let these Desultory Colors in the same Position, and with all the same Circumstances, be Inspected by a thousand Sane Men one after another, and they shall all give in the same Verdict of them, which shews that they are Really such in their own Nature, and there is not, nor can there be, in any Man any other Sensation thereof: whereas any Infirmary of Sense may be rectified by a rectified Sensation, as I shall shew hereafter; and though they were only Phantasms, as the others in Imagination, yet they should be Real Phantasms, or *Entia Sensationis*, as I have said. Thus let the Yellow and Blue Glasses be always laid over one another and not removed, and you shall always see a Green through them against the Sun, by that Local Union, as well as of any Green Produced by a Spiritual Union of both those Colors, by dying, or the like: and



though as their Generation is Momentany, so their Corruption may also be, yet you may continue them as long time as you pleas to continue the Local Union. And so also more Fixed Colors made by several Infusions of Chymical Spirits may be almost as Momentaneously Generated and Corrupted, and yet if any Chymist shall therefore deny such Fixed Colors to be Real, I desire him to reconfyder Flame, which is as Momentaneously Generated and Corrupted in the Successive Individualitys thereof every Moment, and I suppose he will not deny Flame to be Real, (which is the chief Instrument of his Art) and Sound certainly is a Real Sensible, and yet never fixed but Desultory. But the true Difference between them is, as I have said, that Desultory Colors are Generated only by Local Union Extrinsically, and Fixed Colors by Spiritual Mixture Intrinsically; and therefore Desultory Colors, wherof External Light is one Principle, as in the Prism, *Iris*, Pigeons Neck, and the like, have not only their Visibibility, but also their very Coloration Actuated by the External Light; as in the Yellow & Blew Glasses laid over one another, which yet are not made Green without the Transmission of the Light through both: so that indeed all Desultory Colors are Actuated by External Light, but Fixed Colors are Actually in themselves what they are, without any External Light, which doth only Actuate the Visibibility thereof whereby they Appear to our Sight by drawing forth the Visible Species which it doth Actuate, as I shall shew heerafter; but as a Picture under a Curtain, and many such other things may Actually be in themselves, though they do not Appear to our Senses, so are Fixed Colors in the Dark, by the Internal Mixture of their own Lucidity and Opacity, which seems to me to be very Evident by Reason, becaus they are Really such Mixtures of Light and Opacity in themselves Internally, and so are Colors in themselves without any External Light, though not Visible to us without it: and also to Sens, by the known Experiment of White which in the same Homogeneous Body, Cloth, Paper, or the like, will not be so soon fired by the Burning Glass as if it be Black, though there be no other Imaginable Difference but only of the Colors, and that Difference is Intrinsically in themselves, and though it is true that the Sun beams Transmitted through the Burning Glass do convey Light as well as Heat, yet I do not conceiv the Light to be Consyderable heerin, or if it be, it is one and the same in itself

self as it doth Aduate the Visibily of both the Colors Externaly, but I suppose that as it doth pass together in the same Emanant Rays with the Heat, and so meet with the Internal Light of the White, the Whitenes, which is more Lucid in itself doth, as all Homogeneous Natures, Univocally Conspire with it and Dilate itself therewith, which is called a Segregation of Rays, whereby the Heat in the same Rays is also Diffused, and so Weakned, and therefore can not Operate so Intensely upon it, as it doth upon Black; which hath most Opacity in itself, that is Contrary unto Light, and doth Congregate the Rays therof, that Oppugn it, and consequently the Heat, which thereby doth Operate more Intensely upon it; and so it is farr more easily Incensed; and accordingly as Colors are more White and Luminous, or Black and Opacous, so they do more or less Segregate or Congregate the Rays of Light, and consequently of Heat: wherefore there is in all Color such an Internal Light, which is in the Mition of the other Elements, as well as Heat in Fume, which is a kind of Culinary Fire, and so I may call this, Culinary Light; which if it be not Perfectly Fixed with Opacity, as in Flame, and the like, makes only Imperfect and Meteorical Colors; yet not such as are so Desultory as the others that are only by Local Union, and if it be Perfectly Fixed, as in other Colorate Bodys, doth Generate more Fixed Colors: And as there are these two Principles of Colors, that is the Agile Light, and Opacity which doth Fix it, so there are only those two Original Colors, White wherein Light is Predominant, and Black wherein Opacity is Predominant; concerning which last I have one Observation, that as all Desultory Colors are, as I have said, Caused by External Light; so among all those Desultory Colors, Black, wherein Opacity is Predominant, was never seen in any Prism, *Iris*, or Pigeons Neck, or the like; becaus Opacity, which doth Fix Color, as I have said, is most Contrary to their Desultory Nature; and yet whereas Diers say White is no Color in their Sens, becaus it will take any other Color, others Philosophically speaking, say, that Black is no Color, though it will not take any other Color, and generally that all Colors are only Apparitions and Spectres, who, as though they could Create and Annihilate what they pleas, will Add to and Diminish from Natures Inventory as they list. And thus they make all Colors to be only certein Desultory Variations of the External Light upon the *Superficies* of Bodys, and the Ob-



jest of the most Noble Sens to be only a fictitious Imposture, affirm-  
 ing Black to be from the Suffocation of the Rays by an Unequal  
 and Porous *Superficies*, and White the Contrary, and so all other  
 Intermediate Colors only more or less such Suffocations of the  
 Rays; which is most Sensibly fals, if we may believ our own Eys;  
 for Snow is most Porous, and yet most White, Jet polished least  
 Porous, and yet most Black; and so Painted Glass is either White  
 or Black, and yet the Rays Penetrate more through the White  
 then the Black, and both of them are apparently White and Black  
 in themselves before, and without any such Penetration; and so  
 Bodys of a like Surface are Indifferently either White or Black;  
 as polished Marble, Skins of *Europeans*, and *Ethiopians*, and the  
 like. All which may also Chymically be Demonstrated by the  
 Generation of Colors in Flame; which though they are as Mo-  
 mentaneous as the Flame, yet are no otherwise Desultory then the  
 Flame itself, as I have said; wherein, when the *Fomes* therof, as  
 the Wax, or Tallow of a Candle, is first Incensed, there is before  
 it be Inflamed or below the Flame a manifest Black, and so in the  
*Fuligo*, and as soon as it is Inflamed a Blew, and in the purest  
 Flame, a White, and in that which is in the *Cusps*, a Yellow, and if  
 it be very Fuliginous, Red, (which is also very manifest in the Ro-  
 bust Fire of the Wike) whereby it plainly appears that Black is  
 from a Terrene Quality in the *Fomes*, and *Fuligo*; and White  
 from the Æthereal Quality of the Flame: wherof I call the one  
 Opacity, and the other Light; though both of these be Mist toge-  
 ther, as all the Elements and their Contrary Qualitys are; but  
 Opacity is notably Predominant in Black, and Light in White,  
 and all other Simple Colors are only Gradual Predominations of  
 either of them; as Blew of less Opacity and more Light then  
 Black; and Yellow of less Light and more Opacity then White;  
 and I suppose Red to be a more Intens and Condens Yellow, or per-  
 haps of a middle Degree between Yellow and Blew, as seems by  
 Local Union of any *Fuligo* with Yellow which renders it more  
 Reddish; but certainly it is not Mist of both, for that is a Com-  
 pound Color, which is Green, as Gray is of Black and White;  
 and so all other Compounds, and Decomponds, which Painters,  
 and Diers, make of these Simple Colors. And as these Meteor-  
 ical Colors, so also all other more Perfect Generations of Fixed  
 Colors are by Actuating the Internal Lucidity or Opacity therof,  
 more,

more, or less: and their Corruption by Reducing it into Potenti-  
ality. As the most White Wood by Aëtuating the Fuliginous Opa-  
city therof in Charking becomes a Black Coal; and when that  
*Fuligo* is Emitted by Burning, it becomes again a Whitish Ash, or  
Grey, Mist of both.

V. The Antecedent Darknes, which was in the first *Chaos*, was  
the Pure Evening therof, before any Light, which was Created  
after it; and therefore Light, rather than Heat, is particularly  
mentioned in the Work of this First Day; becaus thereby this,  
and all Successive Days, were made and Divided into Day and  
Night Artificial; as it followeth therupon, *And God Divided the  
Light from the Darknes, &c.* And so in this whole History of the  
Creation (which is as the Decalog, and the like, very Compendi-  
ous, and Comprehensive) though only some more General or Prin-  
cipal things be mentioned, yet all others that are Coordinate and  
Connatural must also be Intended: and certainly there never was  
any System of the World declared and described either more tru-  
ly, or in a more short *Epitome*. Now wheras the Antecedent  
Darknes did continue for some Time on the face of the Deep, wher-  
in the Spirit of God Moved upon it, it may be Curiously Inquired,  
how long that Space of Time was, wherein the Antecedent Dark-  
nes was and continued, before the first Light was Created? but as  
Divine Wisdom doth not regard Human Curiosity, nor attend to  
satisfy it, so I esteem it Impertinent, though I may discours it *Hu-  
manitius*. However I must conceiv, as I have said, that the Spirit  
of God did not only Move or Incubate on the first *Chaos* to Prepare  
and Predispose it before and untill the Light was Created, but  
Conformably untill all the other Original Creatures in all the Six  
Days were Produced, and the whole Creation and Courf of Na-  
ture finished: for they were all Supernatural and the Immediate  
Works of God. And concerning the particular Space of Time be-  
tween the General and Proper Creation or Begining, and the first  
Improper Creation of Light, I conceiv it probably to have been  
Twelv Hours, and somewhat more, and that there was neither any  
Diurnal, nor any Nocturnal Light, during that Time: For so the  
Computation of all the Six Days is by Evening and Morning aswell  
as of the First; and the Evening and Morning made the First Pro-  
per Day Natural, which most probably was Equinoctial, and was  
after-



afterward Divided into Day and Night Artificial; and the Evening is alway sett before the Morning, as it was before it in Time, but the Day before the Night, as it is before it in Nature; because the Day Artificial was first so made by Dividing the Light from the Darknes, that is, into a Diurnal, and Nocturnal Light, and so God saith, *I form the Light and Create Darknes*, as he did in the First Day Originaly; whereas Pure Darknes is not Creable, but the Night which is called Dark Comparatively. Wherefore as this Improper Creation in the Six Days was Original Generation, wherunto all Successive is Conformable, so I suppose that as the whole Day, according to the Diurnal Courf of the Æther then first putt into Motion, and so still continuing is fower and twenty Hours and somewhat more; so the two Halvs therof, or first Evening and Morning must be supposed to have been also of the same Duration, and each of them Equal, as well as the Second and Third, before the Sun and Moon were Created. Nor can I conceive how there could be any such Day and Night Artificial in the First Day, as since; because they were then first so Created after the first Evening was ended; but could not Possibly be before they were so Created: And when Light was Created it was Morning in all the Æther in respect of the Precedent Evening, and so there was never since any such Evening and Morning, as made the first Day Natural: because there is no such Pure Darknes, but only Comparative Darknes, whereby Night was made after the Evening was ended, by the first Creation of Light, which was the first Morning; and God in that Morning did afterward Divide the Light into a Diurnal and Nocturnal Proportion therof, whereby he made Day and Night Artificial. And thus, though Time was Created in the Begining, from whence also the most Proper Natural Day did Commence, yet the Artificial was Created in that First Natural Day; and the Day Natural according to the Courf of the Sun in the Fourth Day, and the two Parts of that Day which we commonly but more Improperly call Day Natural, that is, Night and Day are not always Equal with the Parts of all other Days: whereas the two Parts of the Proper Day Natural, that is, the Evening and Morning being Computed from the Begining are always Equal and each of them Twelv Hours and somewhat more. And because the Parts of the Solar or Improper Day Natural, except Equinoctial, are Unequal, therefore the Whole may  
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be sooner as in Summer, or later as in Winter; but the Proper Natural Day is never sooner or later, becaus it is the Succession of Power and Twenty Hours Daily from the first Power and Twenty Hours, and Begining of the first Day Natural: and so all the Six Days both before and after the Sun and Moon were made to Rule the Day and Night, and also the Seaventh or Sabbath are Computed accordingly. Wherefore becaus this Day is most Even Exact and Invariable according to Time, God also appointed it, and not the Improper Day Natural, to be the Measure of Time in *Sacris*, and so it is laid *from Even to Even shall ye celebrate your Sabbath*, and not from Night to Night, and though the later *Jews* did not so observ it; yet *Ab Initio non fuit sic*. But both the Day and Time of the Christian Sabbath which is appointed for us *Gentiles* in all Parts of the Earth, is, and must be Altered by the Resurrection of *Christ*, which if it should begin as the former at Evening, as some would have it, then it should begin before the Resurrection; for unless that were also some Time after the Begining of the Evening *Christ* should not have laid in the Grave three Days Synechdochically, as most certainly he did, and though it be expressly declared when the Creation was finished and God first Rested, that is, at the end of the Sixth Evening and Morning or Proper Day Natural; yet it is not so expressed or ascertained when *Christ* Rose again, but only that he Rose very early in the Morning of the Third Day, that is, the Solar, or Improperly Natural. Now as there was not only a Proper Natural Day, but also a Division therin of the Light from the Comparative Darknes, and so Day and Night Artificial made thereby in the First Day Originaly, and Successively in the Second and Third Day, before the Sun or Moon were made to Rule them, more particularly, as I shall shew heer-after; so certainly there must have been some Circumrotation of the *Æther*, and of the Light Inherent therin in the Precedent Days; for if the Light were Equally in all the *Æther*, then there should have been Equally all Day in all the *Æther*; and there could not be such Day in one Hemisphere and Night in the other without a Circumrotation of the *Æther* and of the Light, whereas there was such a Division of the Light, as made Day and Night Artificial therin, and this Day and Night were then Originaly made, and were such as they have ever since been Successively by the Diurnal Courf of the *Æther*, (except only the more Special Variations therof by the Proper Courses of the Sun and Moon

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which



which were male thereby, and are Annual and Menstruous, but not Diurnal) which must necessarily be by the Circumgyration of the whole Æther, and of the Light thereof in one Hemisphere, as the Sun now is so carried about by the Æther Diurnally. Certainly the Earth, Water, or Air, or any of them could not so Move in this First Day, because they were not yet Improperly Created, or so Made, as it is said of the Air that God *Made* or fitted the *Fir-mament* thereof, or *Expansum*, in the Second Day, (though they were Properly Created in the Beginning in their several Bodys and Spheres) but were then all in Rest, and only the Spirit of God Moved among them, and as the Irregular Winds, and the Regular Courses of the Tides and of the Sun, Moon and Starrs were not before, or untill those other Elementary Bodys were Improperly Created, so neither was there any Motion of the Earth; wherof if we could suppose any such Motion, yet we may not reasonably suppose it to have been before the Third Day, and Improper Creation of the Earth therein; concerning which I shall Discourse hereafter, and now only add one other Observation; that as the Sun, though farr less then one Hemisphere of the Æther, yet maketh Day therein by his Emanant Rays, so probably the Diurnal Light in this First Day did not fill one whole Hemisphere, but only some such part thereof, as according to the Vigor and Extent of the Emanant Rays thereof did make Day Artificial in one Hemisphere, and perhaps with some such *Crepuscula*, as the Sun now doth make, for we may well conceive, that First Day and Night to have been Analogous to every Day since in all the general Circumstances thereof (besides only such as are more specially superinduced in the Variations of sooner, or later, more, or less, by the Courses of the Sun and Moon) whereas if that Diurnal Light Inherent should have filled one whole Hemisphere, the Emanant Rays thereof would have extended much farther, and the Inherent Light should have been Hemispherical, which is not Conformable to the Natural Figure thereof: and therefore I rather conceive, that it was a Particular Globe *Globo* or *Confluvium* collected from the Light, which was first Generally and Diffusively Created in the whole Æther, and that which was left in the common Body thereof is therefore Comparatively called Darknes; and though it were not strictly such Darknes, as was in the *Chaos*, yet the Expression is not therefore Popular, so as some would make all the Philosophical Expressions in Scripture to be but Necessarily to be  
so

so understood, for there are no *Pura Tenebra* in the whole Elementary Nature, and in the Superæther there is either a Superæthereal Light, or neither Light, nor Darknes; for where there is not, nor Naturally ought to be any Positive, there is no Privative, which is founded in the Positive, & is only the Privation thereof; as in a Stone there is neither Sight nor Blindnes: wherefore after the first Creation of Light, that Darknes must necessarily be understood of Comparative Darknes only; and this is the Natural Darknes which God Created, and is also sufficiently so explained in the ensuing words, *And the Darknes he called Night*, which hath its Nocturnal Light: whereby it is expressly and most exactly Distinguished from a Pure Privation of Light, such as was Antecedently in the *Chaos*, wherein there was neither Day nor Night. And heer again Cavillation, which is encl's, may proceed to term these Expressions, *God Said*, or *Called*, and the like, Popular; though as the others, so these also are most Necessary; for indeed nothing can be Properly spoken of God, either as he is in Essence, or in Operation, and there can be no Expression more apposite, then that the Creatures are *Verba Mentis Divina*. And heer I must affirm of this whole History of Creation that it is not Popular, as some would have it, and thereby render it Insignificant unto all others, as well as to themselves; whereby they have lost the Benefit of so great a Treasure, which hath been a *Chaos* to this Day, and is still hid from the Wise and Prudent; or rather they thus hide it from themselves: though I am confident that neither themselves, nor any other, can ever declare or describe such a System of the World in more brief or less Popular Expressions. Wherefore I term it a History, that is, of Matter of Fact; which hath only such apt Expressions as serv to declare and describe the Matter of Fact, and therefore certainly are not Popular; otherwise we may call all the Sacred History of *Adam* and *Eve*, of *Noah*, of *Abraham*, *Isaac*, and *Jacob*, and of all the Patriarchs, Judges, and Kings, and Governors, and of *Christ* and his Apostles, Popular; and reject all the Matters of Fact Recorded both in the Old, and New Testament, and our very Creed; which should be most Irreligious and also Irrational. Thus when God saith, *In the Beginning he Created the Heaven and the Earth*; shall any say, he did not, and so of the rest? And if any may be so Irreligious as to deny the Verity of the Fact, yet he may not be so Irrational as to deny the Veracity of the Expressi-



ons, or to affirm that the Scripture doth not say, that *In the Beginning God Created the Heaven and the Earth*, and so of the rest. But that we may not frame any Popular Notion of what we intend by a Popular Expression, and so Confound our Discours therof, as I have hitherto strictly examined other Terms and Expressions, so I shall also now examin this very Expression of an Expression. And I acknowledg generally all Language to be Popular; becaus Words are no Natural Signatures, but only Instituted *Tessera*, or *Symbola* of Things, Coined by Men, and so made to pass Current among themselves. And since the Confusion of Languages every National Language is more particularly Popular, or peculiar to the People of that Nation; and the same Word may signify one Thing in one Tong, and another in another; as *Nay* in *English* hath a Contrary Signification in *Greek*. Wherefore I acknowledg also that there is such Popularity in the *Hebrew* Tong, and also many Idiotisms therof, as well as in others; but I suppose this is not the Popularity Intended; for then we should also Invalidate all Language as well as this, and all Books as well as the B.ble. Also there are certain General Propertys and Modifications of all Human Language, as well as several Idiotisms of Particular Languages. As that which is spoken Respectively of any Thing, or in one Respect, according to that which is the Subject Matter of the present Discours, can not reasonably by any Rational Men in any Language be Interpreted Absolutely, or in all Respects whatsoever. And so again, as I have before noted, that which no Human Language can Properly Express may not reasonably by any Rational Men be Interpreted Properly, and the like; which if we should not allow, we should destroy all Human Discours; and otherwise then so, I know not one Popular Expression in this whole History of the Creation; and such Popularity also is, and must be, in any other History of Matter of Fact: and therefore this can be no reason why any should regard it less then any other Philosophical Discourses whatsoever. Wherefore they must rather Intend by Popular Expressions such as are according to false Apprehensions of Common People, or Deceptions of Sense, and the like; and I suppose, they can not shew any one such in all this Narration, and indeed it is great Impiety to conceiv that there should be any such in it, which doth so Historically and Intentionally declare and describe the *Genesis* of the World:

World: though in other parts of the Scripture, which are not so Historical and Intentional, I also acknowledg that there are all the Varietys of Human Language, and so there are many Expressions which are spoke, as we say *Rotunde*, and so indeed Popularly for common Use, and such as are allowed in all Arts and Sciences, even Mathematical; and many Figurative Expressions, yea Hyperbolical and Ironical, in some more Poetical and Rhetorical parts therof; which yet may as easily be discerned as in any ordinary Discours: but certainly the Divine Verity doth not any where offer any thing of Fallity or Deception, but Expresseth most Infallible Truth in the common Language of Mankind, and particularly according to those Tongues, wherein it is writ; and most Wisely Ordereth and Varieth the Expressions according to the Occasion and Intention therof: and so heer concerning the *Genesis* of the World it speaketh not only most truly, but also as Narratively, and as Philosophically as any Philosopher whatsoever: and therefore none may justly neglect it upon any such pretension of Popularity; neither do I suppose that to be the very reason therof, as is pretended, but rather that it speaketh too Expressly and Exactly those things which are Contrary to the Private Opinions of such Pretenders, who, becaus they can not Evade the Divine Authority therof, would Elude it, by supposing that it neither doth, nor can, speak any thing against their own preconceived Opinions: and therefore as they esteem all the World of Mankind besides themselves Popular, and to be in a Popular Error; so they most Profanely and Presumptuously Interpret Scripture itself rather according to Common Errors, as they suppose, then will endure it to Contradict their own greater Errors, which yet they will maintein as Oraculous: and I find this Humor to prevail not only with such who do wholly exclude Scripture from all Philosophical Discourses; but also in many Commentators, who rather correct *Moses* by Heathenish Philosophers, in any such Points as are not Articles of our Creed (as the Creation, and the like) then them by *Moses* in their Timid and Partial Explications: yea even Translators, who should strictly embrace the very Letter of the Text, yet do thus Warp and Incline as farr as they may in their very Expressions, as I have observed: and I know not how among them all this Divine Philosophy hath hitherto been Rejected, Neglected, or Abused; whereby Mankind hath received



little more satisfaction from it then from any other Human Philosophy; though it be the only Standard of Truth, and the first Sentence therof, *In the Begining*, &c. the very *Alpha* of all Divine Letters, and the Foundation of all that Divinity, and Morality, or our whole Duty toward God and Man that is contained in the whole Scripture: whereby it plainly appears how firm a Connexion there is between Theology, Morality, and Natural Philosophy; and of what Consequence and Concernment, according to Divine Wisdom, a right and sound Knowledg therof is both in Church, and State: and I dare affirm that there never was extant in the World any other Writing that hath more firmly and plainly laid the Foundations of these three most Noble and Profitable Sciences: and as it is my Designe to Demonstrate it even in Natural Philosophy, (which perhaps men may least expect,) so I may suppose, if I shall perform and obtain this, they will easily grant it of the others: And I hope, though I may fall short of mine own Intention and their Satisfaction, yet I shall discover so much Light therof, that others will begin to believ that more may be derived from this Fountain, and so proceed to perfect what I have begun. Certainly whatsoever is in this Sacred History, is Truth, and all that Truth is Fundamental, wherupon Human Reason (to which God hath left the rest for the Exercitation and Improvement therof) may proceed to build; but other Foundation then this can no Man lay. And though the Divine Spirit in Inditing it did not intend to satisfy the more Curious and Impertinent, yet such things as no Memory of Man hath otherwise Preserved and Delivered, nor our Reason and Judgment could have Retrived, are heer clearly Reveled, and faithfully Recorded. As not only that there was a Creation and a Begining, but how many Thousand Years since, and all the Succeeding Chronology of the World, and the whole Order and Process of Created Nature, how it was first Ordained and Instituted in Six several Days, and the like: and as all Christian Historians have rectified the Fabulous Chronology of Pagans by the former, so should Christian Philosophers their Contradictory and Unsatisfactory Philosophy by the latter. But again on the other hand we must carefully avoid all Cabalistical and Allegorical Interpretations therof, and satisfy our selves with the plain and simple Sens of the Text, according to the Subject Matter therof, and Context of Scripture. And thus  
wheras

wheras the Rabbins from those former Expressions, *God said,*  
 and *God called it,* and the like, have asserted the *Hebrew Lan-*  
*guage,* wherein this History of the Creation was writ by *Moses,* and  
 the Names of Day, Night, Heaven, Sea, Earth, and the like, which  
 are said thus to be Named by God, to be therefore the Primitive  
 Language Instituted by God, and Original of all others, I dare not  
 so affirm, though I otherwise grant it to be the most antient of all  
 Languages now Extant, becaus that Book is the most antient of  
 all Books now Extant. But God is also said to *call the Starrs by*  
*their Names,* though all of them be not Expressed: for their  
 Names to him who is the Creator of all things are their Created  
 Natures, by which he knows them Immediately and Essentially,  
 and so he speaks by Real Language, or by his Works, which, as  
 I have said, are the Extrinsicall and Artificial Words of the Di-  
 vine Mind, and his Word is only a Comment therupon, and so  
 the Heaven and Earth were Denominated by their Created Na-  
 tures; and when he made Day and Night, he so denominated  
 them by making them to be such. And heerin Divine Language  
 and Human Differ; for wheras *Adam* afterward gave Names unto  
 the Creatures, he only Verbally called them by some Instituted  
 Names, Expressive of such Natures as God had made them; but  
 did not, nor could Really make them to be such. And the Primi-  
 tive Language, whatsoever it was, may rather be referred to him;  
 for it is Mans Creature, and of Human Institution; and possibly  
 he might speak that Language: and so it is said, *Adam* called his wife  
*Chevah,* and she her son *Sheth.* However it is certein they both  
 spake some Language, which also declares the great Perfection of  
 their Created Witt, which could so soon frame such a Common  
 Language whereby they understood one another, and that must be  
 Primitive, becaus they were the first Man and Woman. And if  
 God afterward spake unto them Vocaly and *Humanitus,* he also  
 spake their Language, by which they might understand him: And  
 it is expressly said that God brought the Beasts and Fowls to  
*Adam,* To see what he would Call them: And whatsoever *Adam*  
 Called every Living Creature, that was the Name therof. And *Adam*  
 gave Names to all Catell, and to the Fowls of the Air, and to every  
 Beast of the Field: so that plainly all these Names were Instituted  
 Originally by *Adam,* and not by God himself Immediately, who is  
 said to bring them unto him, To see what he would Call them; that  
 is,



is, to Exercise his Human Facultys both of Speech and Reason: and accordingly *Adam* did give to every one his Specificall Name, and *that was the Name therof*. Therefore wheras they make the Divine Institution of the *Hebrew* Language to be the Foundation of their *Cabal*, that very Foundation is too Cabalistical, and remains to be proved: and perhaps though that Language generally were Primitive, yet the Dialect therof, as of all others, might be much A'tered before the Confusion, but especially after it, and most probably it was first spoken without the Character, which they also make to be Cabalistical. And there are some such Criticks who accuse the *Hebrew* Language itself of many Defects; wherefore certainly it was not Immediately from God, all whose Immediate Works are most Perfect; but from Man; and if from *Adam* in Paradise Originally, hath been since much altered and corrupted. Therefore as, I conceiv, there is nothing Mystical or Cabalistical in Numbers, so neither in Letters or Figures, or any other Quantitys; and as there is only a plain Signature of the Notion rather than of the Thing in any such Literal Characters, so also in Words which are only Sounds. And so the Names which *Adam* gave, did signify only Notionally and Intellectually; whereby also it appears, that he had a most Perfect Philosophical Contemplation and Inspection of their Natures, according to his most Perfect Reason and Natural Understanding: which God, who had Created his Intellective Spirit, and given him Dominion thereby over all Sensitive and Inferior Natures, brought these most Curious and Difficult Pieces of Nature, and in the very next *Classis* therof to himself, purposely to Exercise and Discover to himself: And though some, who think themselves Wiser than *Adam*, deny even this to him, and very Presumptuously Arrogate to themselves more Knowledge of Nature by some Artificial Advantages, as of the Telescope and Microscope, and the like, then ever *Adam* had in Paradise; I will not deny but that they may have more Sensation thereby than he Actually had, but yet I suppose both his Understanding to have been farr more Telescopical, and also his Witt more Microscopical than ours; and that Potentially he was able to have Contrived all such Artificial Advantages whatsoever as well as Language, if he had any such need therof, since they are only the Applications of certain Natural Causalitys which were then most Perfect, and wherof he had a most Perfect Intellection

tellection according to his Perfect Human Nature in that Con-junct State therof wherein he was Created. But yet I do not conceiv that he did know, or could even then know such things as are Naturally in themselves Indemonstrable and Incomprehen-sible to any Human Reason, as Mathematical Points, and other *Asymmetra*, which yet are the very least and lowest of Entitys; becaus, as I have shewed, they are Demonstrably Indemonstra-ble, and were purposely so secreted by God for the Humiliation of Man in his most Perfect State, and for the Admiration of himself Seen in his meanest Workmanship: for as there is still left in Nature *Veritas in Profundo*, for the Exercise of Human Rea-son and Study, and it is Sloth and Idlenes in us not to Digg and Search for it; so there is also *Veritas in Abyss*, which is In-scrutable, and it is Folly in any to Inquire farther into it. And so there are many things which we may Apprehend, That they are, but can never Comprehend, What they are: and when we once come to know that we can know no more of them, we have arrived to the utmost Bound of Human Knowledg; and there we must Acquiesce, and not Affect Contradictions, to know *Omne Scibile & non Scibile*; which is a Madnes beyond the Tentation of *Adam*, who knew that he could know no more then he did as Man in his present State, and therefore Aspired to be as the Gods, knowing Good and Evill. And though some term such a Prudent Ignorance and Sober Acquiescence, *Ignorantia Asylum*; yet it is indeed rather *Scientia Adytum*, wherein Humble and Pious Minds Adore and Admire their Creator, who is both Infinite in his Ef-fence, and Incomprehensible in his Operations.

VI. Now let us Prais the Infinite *Jehovah*; Imment, and In-comprehensible; Eternal, and Necessary; One, and Universal Being, and Welbeing in Himself. Who most freely overflowing in the Creation of this Finite World, as a Transient Effect of himself, first Caused it to Start forth from Absolute Notbeing in-to Being, and afterward Invested the Naked Being of the *Chaos* with a Perfect Welbeing in Six Days. Which thereby was made to be a Finite Something in itself, but as Nothing in his Infinity; Mensurable in itself, but as Nothing in his Immentity; Tempora-ry in itself, but as Nothing in his Eternity; Numerable in itself, but as Nothing in his Unity; who still comprehends all Creatures



in their Essences, as he did before in their Possibilities. And as the World was Created by him without itself, so it would again be Annihilated of itself, without his Continued Creation. Who hath built this great City of the Univerſ for himself, and for the Majesty of his Kingdom; and hath Created all his Subjects therein by his own Immediate Power, and doth Govern them all, and all their Subordinations for his own Supreme Glory. Who hath made the Utmost and Highest Sphere thereof to be his Holy Temple; Ingenerable, and Incorruptible: whose Roof and Cover is the *Superſcies* of the Universal Globe, Circularly Including all Created Entity within itself, and Excluding all Nonentity from itself. And the Immovable Foundations thereof are Arched over the whole Elementary World; wherof the Vast *Æther*, and Highest Convexity thereof, is less then the lowest Concavity of the *Superæther*; and the whole *Æthereal* Sphere is the great Partition between it and the Immortal Inhabitants thereof, and the Mortal Inhabitants of the Inferior Globe; Disterninating them not only by its Immens Superiority and Profundity, but also by its most Rapid Motion; and Defending itself from all their Assaults and Encounters, while it Predominateth over them all: Whose Heat as a true *Archam Faber*, or *Vulcan*, from which nothing is hid, Generateth and Corrupteth them; either like a *Phœbus*, Fostering and Nourishing them in the more Temperate Zone; or like a *Phaeton*, Burning and Consuming them in the Torrid Zone thereof. And therefore is farthest Removed from them, and Diverted by its own Perpetual Motion, and Tempered by the Mediation of the Frigid Air, or Drowned with the Clammy Water, or Imprisoned in the Consistent Earth, untill at last this Firstborn and Strength of Nature shall Destroy them all with an Universal Conflagration, and turn the very Original *Chaos* into an Everlasting *Gehenna*. Also Light, the other of those *Æthereal Gemini*, is as Amiable, at Heat is Powerfull; Aduating all the Visible Beautys of Nature, and is farr more Beautifull in itself; Discovering all that is between us in any of the other Elements and its own Profundity; Adorning Culinary Fire with a Golden *Flammœum*: so that Infants newly born are ravished with the Lustre, and fix their Eys on the Beauty thereof, and all Domestical and Savage Beasts both Love and Dread the Majesty thereof. Which opening the Shopwindows of the World sets forth all the  
Wares

Wares therof with no fall Lights; Inriching Gold itself with its Brightnes, and Irradiating Jewells with its Rays. Which maketh Day by its desired Prefence, and Night by its deplored Absence: And is in itself the most Excellent Sensible of the most Excellent Sens, and the Visible Hieroglyphike of Invisible Spirits; and of all other Elementary Natures affordeth most both of Contemplation and Conversation to Sensitive and Intellective Animals.

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SECTION

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## SECTION. VIII.

And God said, Let there be a Firmament in the midst of the Waters; and let it Divide the Waters from the Waters. And God made the Firmament: and Divided the Waters which were under the Firmament from the Waters which were above the Firmament. And it was so. And God called the Firmament Heaven, And the Evening and the Morning were the Second Day.

## EXPLANATION.

- God having Perfected the Æther, did by the Heat thereof cause the Vapors of Water to Ascend into the Air; when it also was fitly Expanded between the Æther and the Waters, and thereby the Vapors of Water which were above were Divided from the Waters beneath. And this Aereal *Expansum* was another Heaven, and so Perfected in the Second Day.

## ILLUSTRATION.

1. *Of the Air.* 2. *Of the Elasticity thereof.* 3. *Of Cold.* 4. *Of Sounds.* 5. *Of Meteors therein.*

- I. **T**He Air is the next Element to Æther, and seemeth to be Continuous with it, because it is also Diaphanous, and doth not Terminate the Sight. And so it is called Firmament or *Expansum*,

*Expansum*, as well as the *Æther*, and also Heaven, as well as the *Superæther*. And becaus it is the next and Immediate Heaven to us, therefore the general Name of Heaven is according to Hebraical Etymology most Proper and Peculiar to it, though the *Superæther* be the most Stupendous Excellent Heaven in its own Nature, as I have said. And as we generally call all that is above us Heaven, so in that respect this is the First Heaven, *Æther* the Second, and *Superæther* the Third. But it is in itself very Different from both them above it, and also from Water, and Earth below it; and as Different from all the other Elements, as they are generally one from another, becaus they are several Elements; though particularly as they are neerer in Situation, so also in Nature one to another. And Air is of a Midle Nature between *Æther* and Water, as Water is between Air and Earth; and so consydered with the *Æthereal* Rays Emanant into it may be called an *Aeriæthereous* Sphere; and with the Vapors and the *Effluvia* therof Ascending into it an *Aquaereous* Sphere, as Water and Earth are a *Terrequeous* Globe. And though becaus it hath Spiritually less Sensible Qualitys then *Æther*, and a less Dens or Gross Body then Water (so that any Vessel filled with it is Comparatively said to be Empty, and Poetically it is called the *Inane*, and Chymists in their most Curious Separations can not well discern it) yet God who Created it hath discovered it to be a particular Element, and one of the three Heavens, and the Fowls of that Heaven feel and find it to be such in their flying therin; and though it be in Rarity next to *Æther*, yet both of them have some Density, and a Proportionable Weight, as I have said. Also though it be farr more Rare then Water which is supposed to be about a thousand times more Dens then the Atmosphere according to the Common Temper therof, and may be many times more Dens then Air Rarefied or Expanded; yet perhaps as Water and Earth do more agree in Density, so also Air and *Æther* (which are both called *Expansa*) in Rarity. But as Air is thus Rare, so it is not only capable of Compression more then Water, but also of Dilatation or Expansion more then *Æther*; which Expansion therof is now made famous by the Name of Elasticity, wherof I shall purposely treat afterward, and therefore not now prevent my self. As Astronomers have devised several Spheres and Regions in the *Æther*, so have others also in the Air; wheras



indeed they have both only their own Proper Regions, which are several, becaus they are both of several Density and Rarity, and of several Elementary Natures; and so with the other two Divide the whole Elementary Globe into their fower several Provinces, as I have shewed; and if any could shew us any such Division Corporeal, and Spiritual, or either of them, in the Æther or Air themselves, they should Prove what they Say, and not only Say what they Imagin. But though no Colorable Cause be offered to make such Partitions in Æther, except the Various Motions of the Sydereous Bodys, which Move in the Æther, and are Moved with the Æther, and need no such Proper Spheres, as I have shewed; yet there is a more Sensible Pretension to prove Three several Regions in the Air, which will be also found to be like them in the Æther, only in Notion, and not in Nature: for wheras they assigne the First Region to be and extend so farr as the Emanant Rays of Æther are Reflected from the Earth, the Midle to be where that Reflection endeth, and wherin the Meteors are, and the Third above them, and so Immediately Contiguous to the Æther; I find no such Partition therof, neither in the Text, nor in Nature. For themselves do not apprehend the First Region to be many Miles high, (nor indeed can it be of any great Hight, if it be below all Meteors, Vapors, Dews, and the like, which continually Ascend into it from the Terraqueous Globe, and are not very high) but certainly the Rays are Reflected much farther then any hath yet assigned the utmost Hight of the whole Air to be. It is reported that the Pike of *Tenriff*, and some such other Eminences of the Earth, may be seen at the Distance of about three Degrees from them, which can not be by the Direct Rays therof, being no Lucid Bodys, and therefore must be by the Reflected Rays of Æther, which are Reflected so farr through the Air; otherwise there could be no Vision of the Object at such a Distance: though indeed Reflection be farr shorter then Direct Emanation, (and perhaps there may be some such Proportions therof, as there are of the Descent and Reflected Motion of any Ball or Stone from a Paviment.) And therefore we can not see so farr by the Reflected Rays of a Candle in the Night, as we may see the Candle itself by the Direct Rays therof. Now Heat is a Congenerous Quality of Light, and Emanant with it in the same Æthereal Rays, as appears by the Burning Glass; and though the Heat of the Sun beams doth Penetrate farther into the Earth, then the Light therof, becaus it is not resisted

sisted by the Opacity therof, which is not Contrary therunto, but to Light, and is only hindered by the Density, and so may not be Reflected altogether so much, becaus it Penetrates more (which also proves Heat and Light to be several Qualitys) yet certainly Heat can not so farr fall short of the Light, but rather there is some Degree of Heat Reflected with the Light unto the very *Æther*, though Proportionably less; and then, according to their own assignment, there is but one Region of the Air. Again the Vapors of Water are said to Ascend above the Airy *Expansum* Indefinitely, which may be to the utmost Hight therof, as well as all over it: and as there are Bright and Dry Clouds above the Moist, and *Stelle Cadentes*, and Comets, and the like, above them, so probably other Tenuous and Invisible Vapors above them; and then also, according to their own assignment, there is but one Region of the Air; and they who assigne must prove that there are not any Meteors or Vapors above their Second Region assigned, which they can never do. But the truth is, that though the *Æthereal* Rays be Reflected from Earth to *Æther*, yet that Reflection both of Light and Heat, as all others, is stronger and longer as it is neerer, and weaker and shorter as it is farther from the Body Reflecting; as well as Emanation is stronger as it is neerer, and weaker as it is farther from the Body of the Inherent Quality which doth Emitt it: and so the Reflection of the *Æthereal* Rays from the Terraqueous Globe back again to the *Æther* is Gradual, and of different Degrees; and thereby doth Produce Different Degrees of Vapors, and several sorts of Meteors in several parts of the Air; and accordingly they attein several Situations therin; and by the Variation of many Circumstantial Causalitys the same Meteors poised therin almost as Glas Bubbles in Water are sometimes higher, and sometimes lower, and have no such Planetary Position in themselves, as Starrs in *Æther*: nor is the Air so Invariable as it. The Spirit of Air is not Exprest by any known Name, and I know not therefore well how to Exprest it, unles we should call it, *Aura*: or the like. And indeed Philosophers generally have so much attended the Gross Matter, and so litle regarded Subtile Spirits, that they have not so much as found out any *Vocabula* of the very Elementary Spirits, except only Fire, which is most Sensible both by the Heat and Light therof; though all the other Spirits be also Substantial Activitys, and have their Sensible Qualitys;



lity; which yet hath not been Determined concerning all the Elements, what are their first Proper Qualities, as I shall hereafter shew, and particularly prove Cold to be the Proper Quality of Air, as Heat is of Æther. Also Air hath apparently another Quality which is Sound, and that is very Sensible, almost as much as Light; but is not so much considered, because it is not so Permanent; and indeed Sound is far more Desultory than Color, as I have said, for though Desultory Color is not, and cannot be, Fixed as an Image can not be fixed on a *Spiculum* (which if it could be, would Excuse and Exceed the Art of any Painter) yet it may be Continued in the same Position as long as you please: whereas Sound is always Transient and Fugitive, as I shall shew hereafter, and can not be Continued one Moment, but is still in Succession, like Flame, and almost like the very Instants of Time. And yet as all the other Heavens are Hebraically Denominated from this first Heaven, Air, so also all Spirits from the Spirit thereof, almost in all Languages. Air hath also a Mixture with all the other Elements as well as Æther, and perhaps more, as Water hath more than it, and Earth most of them all: and so it hath more of the Terrene Qualities than Æther, and less than Water, as it hath more Refracting Opacity than the one, and less than the other; and so also more Consistence, than the one, and less than the other; and therefore is probably less Fluid than Æther, as it is apparently more Fluid than Water.

II. The Æther, as I have said, is most Rare, and probably can not be more Rarefied than it is in its own Element; and so the Earth most Dense, and can not be more Densified. And though I know not whether Æther may be more Densified, yet certainly Earth may be very much Rarefied, as in Soot, Camphire, Salts Volatilised, and the like. But Water is most notably capable of Rarefaction into Vapors, and they are as much Condensated again into Waters, though I suppose it can not be so much Violently Expanded or Comprest, and that Air can not be so much Condensated or Rarefied as it may be Comprest or Expanded. And of all other Elements Air is most capable of Compression as in the Windgun, and of Expansion as in the Airpump: (which from thence may be rightly termed the *Expansor*) and from this Compression and Expansion thereof there follows a Natural *Motus* or  
*Nisus*

*Nisus ad Restitutionem*, or Resilience, which is now Superfcribed with a new Title of Elasticity, though the Term properly signify rather Abaction or Pullion then any such Return or Restitution, as is or ought to be Intended thereby, and in plain *English* is better termed Springines, which is more Proper to Compression then Expansion; though as it is Confusedly used for both, I am forced also so to use it, only for more clearnes and distinction I shall rather ascribe Elasticity to Fluid Bodys, as Air, and the like, and Springines to Consistent, as Steel, and the like. But heer I must Remind what I have formerly Observed, that there is a very great Difference between Rarefaction and Condensation which are Spiritual, and by Intrinsical Generation, and Expansion and Compression which are Corporal, & by Extrinsical Violence: which Difference doth most plainly appear by this very Elasticity: for no Elasticity and Motion or *Nisus* to Restitution doth ensue from the former, becaus they are so Intrinsically Altered by Natural Generation; whereby the Predominant Spirit having in the Generation reduced the Body to a fit Rarity or Density for itself, doth so continue it as long as it doth Predominate; but only from the latter, when only the Body is by any External Violence so Expanded or Comprest, and the Predomination of the Spirit not Varied by Corruption, and therefore it reteineth still such an Actual *Nisus*; which, when the External Violence is removed, becomes a *Motus ad Restitutionem*. And yet both the former and the latter are generally Confounded together, which hath so much Confounded the right Knowledg and Understanding therof: but being thus clearly Explained and Distinguished, will very much facilitate and clear our Discours therof. And this may evidently appear in all the Experiments of Rarefaction and Condensation, or of Expansion and Compression. As first in the Sealed Weather-glass, which is the true *Thermometer* without any Communication with the External Air, and accordingly with the Variation of the Density or Rarity of the Body therof; from which it is defended by being so Sealed, and is only Varied in itself by Heat or Cold, which are Spiritual Qualitys, Penetrating the Glass, or Operating upon it by their Emanant Contact, and consequently upon the Water; or any other Liquor within it (which whatsoever it be, we will generally call Water) and if Cold have no Emanant Rays like Heat, yet it may, as I have shewed, Generate Univocally a Potential Cold in the Glass, and so thereby



also in the Water by Producing the Potential Cold thereof into Actuality (as also Sound which is another Quality of Air Mist in the *Compositum* thereof may be so Produced, as I shall shew hereafter.) And therefore the Water in the Sealed Weather-glass doth not Fall in Hotter Weather, nor Rise in Colder, as in the Open Weather-glass, but Contrarily Rise in Hotter, and Fall in Colder Weather; because the Included Water being Intrinsically Rarefied by the Heat doth Extrinsically Compress the Air, which also would itself be Rarefied, and hath therefore an Intrinsical *Nisus* therunto in itself; but yet is Compress'd Violently by the Water, which is more Dens and Robust in itself, and the Air more Rare and Tender in itself; and so again the Included Water being Intrinsically Condensated by Cold, doth Extrinsically Expand the Air, which also would of itself be so Condensated, and hath therefore an Intrinsical *Nisus* therunto in itself; but yet is expanded Violently by the Water which is Condensated, and being more Prepotent, as I have said, doth so Expand and draw down the Air to fill the Space which it hath left, *Ne detur Vacuum*. Also if the Sealed Weather-glass be carried up to the Top of the highest Steeple or Hill, where the External Air is much more Rare then at the Bottom, yet the Water will not suddenly Fall, as in an Open Weather-glass; because the Water and Air in the Sealed Weather-glass have no such Communication with the External Air, and the Corporeal Rarity or Density thereof; but is only Rarefied or Condensated by Internal Heat, or Cold; and that can not so suddenly be Produced in it as to make any such Variations: whereas in the Open Weather-glass, because it is Open, the External Air doth Corporeally Communicate with the Included Air, and so by Mingling with it doth suddenly Vary the Rarity or Density thereof, as Vinegar Mingled with thick Ink, or the like: And therefore the Included Air is suddenly Varied, and sooner by the Rarity or Density of the External Air, then by the Heat or Cold thereof, which require more Time Univocally to Generate Heat or Cold in the Included Air, whereby it may be Rarefied or Condensated in itself: whereas if the External Air be Actually more Rare, though more Cold (from other Circumstantial Causalities, as in clear frosty Weather, or the like) the Included Air in the Open Weather-glass will also be more Rare; because, as I have shewed, it doth Communicate and Mingle with it; and so if it be more Dens,

Dens, though more Hott; as in a Minepitt, the Included Air will be also more Dens, for the same Reason; and consequently the Water will Fall in the former, and Rise in the latter Experiment, so that the Open Weather-glass is indeed rather a *Pycnometer*, as I may call it. Also in the common Experiment of drawing up Water in an Urinal or other Vessel by Flame, or heating the Vessel, as soon as the Actual Flame, which did Actually Rarefy it, is Extinct, the Air is again Condensated, and the Water will ascend suddenly, (or more slowly if it be heated,) and afterward so Mingle with the External Air, and Participate of the Rarity or Density therof, like any other such *Pycnometer*; for so it stands at that Hight wherunto it hath Ascended, and will be Varied afterward as in any Open Weather-glass by applying Heat to the outside of the Glass, which will make it to Fall, and when that is abated to Rise again, and not stand afterward as low as it Fell, as it doth at that Hight which it attained by the Calefaction before. And it is consyderable in this Experiment, that the Air is Rarefied so notably in the Glass by Flame or Fire within the Glass, together with all the Fume therof; and yet the Rarefaction of both, which is Proportionably as much in Extension as the Water which Ascendeth afterward, doth not Depress it below the *Stagnum* therof in the Basin; wherefore certainly it must pass out of the Glass, (whose Neck is filled and closed with the Water therein equally with the Levell of the Water in the Basin, as the Top of the Torricellian Tube is with the Mercury that is in it) by some such ways and passages, as I shall heerafter discover and declare concerning the Torricellian Experiment. And it doth not depress the Water below the *Stagnum* therof in the Basin, as Air Rarefied within an Open Weather-glass doth the Water therein below the Standard therof; becaus in this Experiment the Water not having yet Ascended above the Levell therof in the Basin, doth not Superpend, nor hath any such *Nisus* to Return downward or descend, as in the Open Weather-glass, or Torricellian Tube, wherein the Cylinder of Water, or Mercury, doth so Superpend upon and above the *Stagnum*, and therefore hath such a *Nisus* of Returning again Downward, as I shall also shew afterward. And so also in this Experiment, after the Water hath Ascended in the Glass, and hath thereby such a *Nisus* of Returning Downward again, if the Air above it within the Glass



be then Rarefied again by heating, or the like, the Water will fall as well as in any other Open Weather-glass, as I have shewed. And the true Reason heerof is not from any Natural Springe of the Air, or Abaction or Pulsion outwardly, as I before noted; becaus the Expansion is Violent and beyond the Natural Density of the Common Air, and the Restitution to it Inwardly Natural; as of bent Steel to its own Natural Figure: for that which is more Constant and Proper is Natural, and the other Violent. Wherefore also the true Reason why in this or any other Open Weather-glass, the Water doth not Return to its Levell (unles the Air within the Glass be Rarefied so farr) though it otherwise might, (not being Imprisoned, as in the Sealed Weather-glass) is, becaus this Elasticity of the Air Expanded by the Weight of the Descending Water doth keep it from Descending any farther then itself will be Expanded by the Weight therof: for so in the Tube of Water or Mercury Inverted, as they Descend, they thereby Expand the Air more, and they Weigh less; and so at length they both come to an *Aequilibrium*, between the *Potentia* of this Elasticity of the Air and *Pondus* of Water or Mercury; and then they both stand at that Height; which we therefore call the Standard: and though the Included Air doth, as I have said, somewhat Communicate with the External Air; yet not so freely, but that it is still farr more Expanded by the Weight: And as the Included Air will be partly Rarefied or Densified according to the Proportion of the Rarity or Density of the External Air; so by the Expansion therof it may be farther Expanded, and by the Compression therof Comprest; which Produceth the like Effects therof in the Standard, but from a Contrary Reason: for though by Expansion of the External Air the Included Air and Water or Mercury will Fall, and by the Compression therof Rise, yet that is not from any such Intrinsic *Potentia* as of Rarefaction and Condensation, but from the Extrinsic *Violence* of Expansion and Compression drawing the Air and Water Outwardly toward that End wherunto it is applied, which is the *Stagnum*, whereby they must necessarily follow that way, and so Descend in Expansion, by drawing it up more the same way Outwardly or Upwardly from the *Stagnum*; and it must as necessarily Ascend by Compression. And so in the Air-pump or *Expansor* the Torricellian Tube and *Stagnum* being placed therin, by the Operation therof; which doth notably Ex-

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pand the Air Outwardly in the Receiver wherein it is placed, the Mercury in the *Stagnum* is thereby drawn Outwardly Upward, and consequently it must Descend Inwardly Downward in the Tube (as that Engine is said to draw up a very great Weight) and yet it Proportionably also draws the Included Air at the other End, though not so freely, and therefore not so strongly, nor can so Communicate with it as the Rarefaction of the External Air doth not so freely Communicate with the Internal Air, as I have said. And this I conceive to be the true Reason of the Torricellian Experiment, and also of the Paschalian Experiment, which are the same Proportionably according to the Different Weight of Mercury and Water, and both of them Differ from the Common Open Weather-glass only in this, that they are Erected to the Highest Standard, which can be made of any such Experiments, whereas the Weather-glass is only a Partial Experiment; as when the Torricellian Tube is shorter then the Standard, yet the Mercury will stand at that Height: but a Pump doth Correspond with the Paschalian Experiment, if it be as High; for the Water will not so stand therein above the Standard, though by Forcers and Buckers below the Standard, and the like, it may be raised higher, as the Waterwork at London-bridg; and I know a Pump near the place where I dwell, which serves an house with Water pumped up about fifty feet high, by making two Pump posts, wherof the lower is about two Inches Bore, and the upper about five with Poles, and a Bucket in it, and two Valys at the Bottom of the Bucket and top of the lower Post. Also the *Siphon*, as to this Purpose, is only a double Pump or double Tube Inverted. But the great Wonderment concerning the Torricellian Experiment hath been, how the Air should come into the Tube, and Ascend above the Mercurial Cylinder; which first seemed so Impossible, as that it was generally Proclaimed to be a Sensible Instance of Vacuity; though it doth as Sensibly Disprove it by the very Standard of the Mercury in the Tube, which therefore doth not Descend to its Levell in the *Stagnum* to prevent Vacuity; and also by Expansion of Bladder, and by the Light which appears in the Tube above the Mercurial Cylinder; which some say is a Body itself, but certainly, though it be only an Emanant Quality, it can not Possibly Exist without a Diaphanous Body, as Inherent Light can not Subsist without a Lucid Body.



dy. Others therefore suppose it to be *Materia Subtilis*, or *Æthereous Corpuscles*, or something they know not what, which yet they will affirm upon all such occasions to fill Pores or Vacuities rather than acknowledg the Truth and Evidence of the most Sensible Experiments: but though *Æther* doth send forth Emanant Rays every way, yet by its own Rapid Motion Circularly it prevents any such Excursions of its Substantial Corpuscles, or *Effluvia*, as certainly would long since have Exhausted it, and made it no *Æther*, unless they can also find a way to Reciprocate and Restore them again, like Vapors to the Sea. But plainly and simply all that is above the Mercurial Cylinder in the Tube is only Common Air Expanded, as I have said; and may appear by all the *Phænomena* thereof. As by the Vibrations and Subsiliences of the Mercury in the Tube when being stop'd with the Finger it is Inverted and sett in the *Stagnum*, which are not like the Undulations of the Surface of the Mercury in the *Stagnum* when it is afterward Moved, but farr different, and more Busy and Tumultuous, as you may easily perceiv, if after the Mercury is settled at the Standard, you so Move it by Jogging, which will caus a common Undulation, but no such Commotion as before; and so if you fill a Torricellian Tube half full with Water, and then stop it with your Finger, and Invert it; you shall see the Air heaving and striving in like manner to pass through the Water, and bearing up part thereof before it to the top of the Tube; till at last the Air setteth above, and the Water beneath: and so if you leave some Air in the Torricellian Tube with the Mercury, or some Watery Bubbles (which commonly remain lurking in it whether you will or no) you shall see almost the same Vibrations and Subsiliences, and that is manifestly Included Air or Water, becaus they were so left in it before. But for a farther Evidence heerof, take another Tube close at one End, and of such a convenient Length and Bore, as that the Torricellian Tube may freely move and play in it (whence I shall call this other the Extratorricellian Tube) and setting it with the Close End Downward, place the Torricellian Tube so likewise with some small Supporter in the Extratorricellian Tube, that the Open End of the Torricellian Tube may be almost as high as the Open End of the Extratorricellian Tube, and then fill the Torricellian Tube so standing in the Extratorricellian Tube with Mercury; and afterward stop the Open End of the Extratorricellian

cellian Tube carefully with a Cork, or the like, and then suddenly Invert both together, and the Mercury will stand in the Torricellian Tube above the height of the Standard; whereas if it were any thing but part of the Air Included in the Extratorricellian Tube, which by the Descent and Weight of the Mercury in the *Stagnum* Comprest, it should in this Extratorricellian Experiment stand at the same Height as in the common Torricellian Experiment, which yet it doth not; but above it, because a very little of the Air, so very much Expanded, doth suffice to fill the small Space above the Mercurial Cylinder in the Torricellian Tube, in this Experiment, and to suspend the Mercury, and therefore when so much of the Mercury as before filled that Space doth after the Inversion Restagnate in the Extratorricellian Tube, the rest of Air which was Included therein is thereby Proportionably Comprest, and by the Elastical *Potentia* of that Compression bears up the Mercury and Cylinder thereof somewhat higher than in the Torricellian Experiment; which doth Concurr with what I said before, concerning the drawing down of the Mercurial Cylinder by Expansion of the Included Air in the Receiver of the Airpump or Expansor; for so contrarily the Compression of the like Included Air in this Experiment doth bear it upward, (and plainly appears to be stronger than any pretended Pressure of the Atmosphere). And this may further appear if you open the first Close End of the Extratorricellian Tube, for then the Included Air therein so Comprest will issue forth with a little Poppysm, which is a manifest signe of the Compression of Air; and then the Mercurial Cylinder will fall down to the usual Standard. And yet more Visibly if you carefully close the first Closed End of the Extratorricellian Tube with a little piece of Bladder, when both the Tubes are Inverted as before the Bladder will apparently strutt, and stiffly rise up, and not be born down by the Atmosphere, as hath been supposed; and then the Mercurial Cylinder will not stand altogether so high as before, but proportionably lower, according to the more Space gained by the strutting of the Bladder. And if the Torricellian Tube be Open at both Ends, and you stop one with your Finger beneath, and then it be filled with Mercury, and so you Invert it with your other hand, and place it in the *Stagnum*, it will notably Introsuct your Finger (which by the Inversion will then be above it) in stead of Air, because it is

next



next to the Mercurial Cylinder, and Weight therof; and yet it will also Introsuct Air below it to fill the Space above it; and all such Introsuctions are manifest Symptoms of Air Expanded, and not of any Vacuity, which as it can not Extrude, so neither can it Introsuct any Body, nor doth need any Body to succeed, as Plenitude doth; but those forcible Introsuctions are from that Elastical *Potentia* of a Body Expanded, which is to Restore itself to its own Natural Density, and other Successions of any Body against the Natural Motion therof are, as I have shewed, only to prevent Vacuity. Nor is such Introsuction any Pressure of the Atmosphere above the Finger, but most Sensibly only a Torture beneath it. Wherefore it is sufficiently evident that the Space above the Mercurial Cylinder is filled only with Expanded Air, which they who deny, do thereby shutt their Eyes against a very Curious Improvement which otherwise they might make therof by Inquiring farther how very subtilly and strangely the Air doth pass into the Torricellian Tube so prepossessed with the Mercury. Which I shall now also consyder. And I can easily grant to others and my self, that it doth not nor, can it Possibly pass and Penetrate through the Extensive Body of the Glas or Mercury, because itself is also an Extensive Body, and two such severally Extensive Bodys can not be in the same Place (which, as I have said, is only Extension in Relation to the Substance of the Body itself, which thereby is in such a Position and Place as it is, (in respect of all other Bodys in the Univers) nor can there be any such Penetration of Extensions, or two Extensions in the same *Ubi*, because it is the Position of the Extensions, and so there can not be two Positions of one and the same Extension, though by Condensation and Rarefaction, Compression and Expansion the Extension itself may be Varied, the Matter being the same, as I have formerly shewed, and doth plainly appear by these and all other Instances therof. Also I conceive that neither the Glas which is a very Imporous Body, nor the Mercury which is Fluid hath any such Pores in itself through which the Air might pass without Penetration; but that the very great Force and Violence of the Introsuction, which I have before discovered, doth make Temporary Pores, or rather some pervious Passages, which are those very close and Indiscernible Strainers through which the Air doth pass in the Body of the Mercury itself into the Tube, and thereby is so very much

much Expanded. As when Boys blow through a Quill, or Cane, into Water, wherein there are no Pores before, yet the Force and Violence of that Blast doth make such Temporary Passages, whereby their Breath passeth through the Body therof in manifest Bubbles: so when a Drawer fills his Wine, out of a Pott held very high into a Glass below, some Air between is by the Fall dashed into the Wine, and appears therein in very small Corpuscles, (which he therefore calls Nits) and again Ascend in small Bubbles standing on the Surface of the Wine: and so in the common Experiment of *Tobacco* taken through a close Vessel almost filled with Water, whereby the Fume of the *Tobacco* shall pass from the Pipe, through the Water, to the Mouth of him who so Introsucts it, which is very like the Introsuction of the Air through the Mercury by the Weight therof; and though the same Body doth Introsuct through itself in the Torricellian Experiment, which is also considerable, whereas in all the others the Operation is by another; yet I do not apprehend this Diversity to make any Difference in the Reason of the thing itself: for so as there be a sufficient Force thus to Introsuct, it is all one whether it be by the Force of the same Body, or of another, or whether it be by a *Potentia*, or *Pondus*, and the Mercury, in the Torricellian Experiment, is putt into such a Posture, as it can not Descend with all the Weight therof, unless it first make way for another Body, that is, the Air, so to pass through it, and to succeed it, *Ne detur Vacuum*; which it doth, as I have said, by the very Weight therof, and so the Air passeth through it, though not without very much Resistance and Commotion, either by Indiscernible Bubbles, or some such Passages. And being so Introsucted by the Overweight of the Mercury, and to Prevent Vacuity the Weight of the Mercurial *Cylinder* below it is as if there were an Introsuctive *Potentia* above it, which might be sufficient so to Introsuct Air through it, as the Breath of a Man is sufficient to Introsuct it through a litle Body of Water, whereas the *Pondus* of the Mercurial *Cylinder* is farr greater then the *Potentia* of any Mans Breath. And the Mercurial *Cylinder* by the Weight therof doth very hardly Introduce the Air through or between the Body therof, and may be sett in such a quiet Posture as it will not so Operate, untill it be Jogged, and begin to Fall; and when it doth Operate the Passages through the Body therof are



opened with great Reluctance and Commotion; as Water by the Weight thereof doth so open its own Body to let out Bubbles with an Ebullition and Undulation in itself; and so the Mercurial *Cylinder* plainly discovereth a very notable Commotion by the Ebullition and Undulation in the Surface and Top thereof, which is to me a most plain Evidence of Air passing through it the same way, as it doth through Water; and so indeed it doth pass through Water in the Paschalian Experiment: and if any may yet conceive a Difference between Bubbles which are first forced into the Water, and so must necessarily pass out again, or Fume Introduced by another, and Air Introduced by the Water or Mercury itself, and the Overweight thereof, let him try and satisfy himself with the other Experiment of filling a Torricellian Tube almost full with Water or Mercury, and then stopping it with his Finger (or if he pleas Hermetically sealing it) suddenly Invert it, and he shall find that there will be both the same *Phænomena* Proportionably of the Commotions, and the same Effect at last of the Air Ascending above the *Cylinder* of Water or Mercury, and of that Subsiding beneath it: and, as I have said before, that the Space above the Mercurial *Cylinder* is and can be filled with nothing but the Air, so Included before in it; so in all these or in any other such Experiments, the Air passeth into the Glass as it doth out of it in the former Experiment, and though the Air be Included in the same Tube with the Mercury in the Torricellian Experiment, yet in this last mentioned Experiment, when the Tube is Inverted, it is thereby placed beneath, and without it (though the Air were before in the Tube) as well as any External Air; and must some way or other pass to Ascend above and within the Mercury, which plainly it doth by the Weight and Pressure of the Mercurial *Cylinder* itself; and so the Air Included in the Tube with the Mercury when the Tube is Inverted is by the Weight of the Mercury first Comprest beneath, and by little and little Transmitted through the Mercury into the Space above it, whereby it is Expanded above, and then again Reduced to its former Density, which fills the same Space above, as it did beneath. And though I sometimes conceived that the External Air might in the Torricellian Tube and Experiment pass between the Glass and the Mercury, (as generally Air will, if it can, pass that way; because those two Bodys are only Contiguous and not Continuous,

as the Water is in itself; and so probably some Air doth so pass in the Torricellian Experiment) yet certainly it passeth also between or through the very Body of the Mercury by those secret Passages which it so maketh, as may appear by the Commotion in the whole *Cylinder*, and more plainly by filling the Extratorricellian Tube with Water or Oil, so as when both the Tubes are Inverted, the Water or Oil shall stand above the Torricellian Tube, and every way Encompass and Drown both Tube and Mercury itself; and then let the first Closed End be opened at the Top of the Extratorricellian Tube Inverted, and the Mercurial *Cylinder* will Subside to a Proportionable Standard (accounting also for the Overweight of Water or Oil) as in the first Experiment, wherein only Air was left in the Extratorricellian Tube. Wherefore I apprehend it so to pass through pervious Passages of the Water or Oil, and also of the Mercury, and that the Proportionable Weight of Water in the Paschalian Experiment is Equivalent to the Weight of the Mercurial *Cylinder*, and doth Expand the Air Percolated through it as much: and so the Air which is so Expanded, when it is above the *Cylinder* by that Elastical *Potentia* therof doth Suspend the like Weight either of Water, or Mercury below it; which after they come to an *Equipotentia* of the one, and *Equipondium* of the other, Equally and Mutually Corresponding one with another there and then rest and settle in their Standard, without any more Commotions and Vibrations. And though the Mercurial Tube be never so Long, yet the Overweight of the *Cylinder* will have the same Operation and Effect Proportionably; And so I suppose, that if the *Stagnum* of the Mercury were never so Deep, and the Torricellian Tube were plunged in it with the Orifice downward, and any Air left in it, or not, and then drawn upward to any Hight whatsoever, yet it shall never be raised above the Standard, nor shall the Air be ever the more Expanded, though there may be several Degrees of the Expansion therof beneath the Standard. And the Torricellian Experiment when it is finished, is also a Weather-glass, and will Rise and Fall as well as a common *Pycnometer*, (but somewhat otherwise, and not so much in Measure) by Communication of the External Air with the Internal in the Torricellian Tube, as well as any other open Weather-glass; and I therefore conceive, that the pervious Passages between the Glass and Mercury, and per-



haps also in the Body of the Mercury still stand open to the Subtile and Imperceptible Air therein, and which doth still Intervene between the Internal and External Air, whereby they so Communicate one with another; And some have observed little Notches or Inequalitys of the Surface of the Mercurial Cylinder at the hight of the Standard after the Torricellian Experiment is finished, which seemeth to be a Perceptible symptom heerof. And thus I suppose that there is the same Reason Proportionably of the Weather-glass, Pumps, *Siphons*, the Paschalian, and Torricellian Experiments, and the like, from the Expansion by the Weight of Water or Mercury and Elastical *Potentia* of the Air itself, by Retraction and not by Pulsion, or any Pressure therof, which they do no more prove, then they did prove the preconceived Opinion of Vacuity; and yet Men are so Fond of their own Fanlys that they would periwade not only other Men, but also Nature and Experiments themselves, to be of their Opinion, and thus have very Confidently Inscribed on the Torricellian Experiment the Title of a *Barometer*; supposing the Atmosphere to press down the *Stagnum*, and so to raise the Mercurial Cylinder in the Tube to the Standard therof; whereas in the Extratorricellian Experiment after the First Closed End is opened and the Atmosphere admitted the Mercurial Cylinder doth Subside; and so certainly the whole Pressure therof can not be so much as the *Potentia* of the little Compression of Air in the Extratorricellian Tube before mentioned. Thus the Torricellian Experiment is grown famous only by certain Errors affixed to it, rather then by any Sensible Truth gained thereby, more then formerly; it being in itself, only the utmost Extent of a Weather-glass, and *Epitome* of a Pump.

III. The First or Principal Quality of Air is Cold, as Heat is of *Æther*, which being Contrary do Mutually Temper one another; and thereby also preserve the Body of Water, that it should not be wholly Resolved into Vapors by the Emanant Heat of *Æther*, nor Congealed into Ice by the Contact of the Cold Air, and both of them do extend the benefits of that Temperature to the Earth, and all the Vegetatives and *Animals* therein. But because some deny Air to be Cold, before I proceed any farther, I shall prove it. I know not that ever any denied or doubted Heat

to be the Proper Quality of Æther or Fire, which also the Text doth imply, becauf it is Synonymous and Connatural to Light, and belongs to the same Element, though Light be only mentioned for all the other Qualitys of Æther from another special Reason, which I have already declared. And exprefsly Drines is the Proper Quality of Earth, which is therefore in the Text Eminently called the *Arida*; (and fo also our Saviour calls it in the Gofpell) that is, the *Primum Aridum*. Wherefore either Air, or Water must be the *Primum Frigidum*; but Water is apparently moft Moist, and fo is every where termed in Scripture, and by all Mankind (except some Philosophers) And that Air is moft Cold was the ancient Opinion of *Pythagoras*, and afterward of the *Stoikes*, and may be proved by that very Argument whereby the *Peripatetikes* would establish the contrary Opinion, which is their Syzygy of the Elements, and their Fower First Qualitys; for they say Air is moft Moist, and therefore Water is moft Cold, and fo prove one Error by another; whereas by the very same Induction I prove Air to be moft Cold; becauf that which themselves affigne to be moft Moist, that is, Vapor, is plainly Water Rarefied, and not Air, nor like it in any thing, but only in Corporeal Rarity; which is very different from all Spiritual Qualitys; and that Vapor is Water, and not Air I shall evidently prove heerafter. Also it doth very Sentibly appear by Wind or the Motion of Air, which Cooleth, and if it be not Vaporous, but Pure and Clear Air, though moft Cold, it drieth rather then Moistneth: though, as I have said before of Heat, Drines, or Moisture, are not Congenerous with either, but Indifferent between both it and Cold, and may accompany one or other, according to Circumstantial Causalytys. But when Air is moft Vaporous, it is commonly moft Tepid; as appears by South Winds, and the Surface of Water, which is next to the Air, and is soonest and moft Congeled; whereas Subterraneous Springs are never Congeled, like Subaereous Rivers; but are rather observed to be Warmer in Winter, and Cooler in Summer, though perhaps not Positively, but Comparatively; and probably Earth hath more Mifture of Æther, and Water of Air, and fo Ice which is Congeled, and Aftually moft Cold, is Aftually moft Aereous; whereby, as they say, it is more Expanded, but Properly Rarefied: Yet Water hath generally some Aftual Cold in it, as



may appear by Washing, and especially by Laving or Waving the Hand in it, which Motion doth more Actuate the Cold of Water, as Winds do Actuate the Cold of Air: though as Heat in a Burning Glass doth not Instantly Burn, so Cold which is less Active, may not suddenly Cool; and being Mingled with Vapor in all the Atmosphere, the Air is thereby Tempered, and doth Cool less: and from many such Circumstantial Causalities the Activity thereof may be much abated. And though it be generally Actuated by Motion, yet it is not therefore Motion, as I have said of Heat, and therein also proved Cold not to be either Rest, or Motion formally in itself: and though Heat generally causes some Motion, yet Cold may be without any Sensible Motion; as in Ice, whereof the whole Body, and all the Parts thereof *per omnia*, are Consistent and Immoveable. And there may be a very notable Motion and Commotion, without any notable Variation of Heat or Cold, as if the Torricellian Tube be filled almost with Mercury or Water and some Air left in it, and then stop'd with your finger, and suddenly Inverted, as I before mentioned, you shall observe a very notable Commotion in the Ascent of the Included Air through the Body of the Water or Mercury, almost like the Commotion that appears in the Dissolution of Metals by *Aqua fortis*; and yet no notable Variation of Heat, or Cold; which plainly shews that the notable Heat in the other is not from the Motion, but rather the Motion from the Heat, as here it is from the Weight: and so Motion being a Common Instrument both of Bodies and Spirits, is Caused by any of them, and sometimes doth Cause them Equivocally; but is not Univocally in itself any other thing than Motion, as I have shewed before generally, and shall still proceed to shew particularly in every thing which may Colorably be suspected to be only Motion. Now though Æther and Air be the more Active Elements, and Water and Earth less Active; and consequently the Proper Qualities of Æther and Air, which are Heat and Cold, more Operative, and of Water and Earth, which are Moisture and Driness, less Operative; yet they also again Differ among themselves; and so Cold is less Operative than Heat, and Driness than Moisture. Thus Heat by Contact, or otherwise so Intense as to prevail against Cold, doth sooner overcome it than Cold Heat; as Fire Warms the Ambient Air almost Instantly; but the Ambient Air doth not so suddenly Extinguish Fire in

Iron

Iron Candent: and though it prevail so farr against Flame as to destroy the Individuality, yet it can not prevent the Succesive Generation therof. Nor did the *English* or *Dutch*, who Winter'd in *Groenland*, or *Nova Zembla*, find their Fires or Lights to go out in the Coldest Seasons. And in their *Antiperistasis* and Conflict, Cold doth more Excite and Provoke the Potential Heat, then Heat doth Cold; for so it makes Flesh to Burn and Blister, and *Nive perustus* is no such Improper Phrase: but when the Cold overcomes the Heat, it Mortifys and causeth Gangrenation; which is sometimes prevented by applying a more Moderate Cold, as of Snow, or the like; which doth not Profligate, but rather Excite and Recover the Internal Heat again. Thus though the Proper Effects of Heat be to heat, and of Cold to cool, yet by *Antiperistasis* they may Produce Contrary Effects, which plainly shews that there is such *Antiperistasis* in Nature, and not only in Notion. Also from other Circumstantial Causalities they may Produce other Collateral and Consequential Effects, as I have already observed of Heat. But whereas Heat first Rarefieth and then Condensateth, contrarily Cold first Condensateth, as Water in the Sealed VVeather-glass by the Frigefactive Power therof, and so also in any Open Water; and then Rarefieth by the Congelative Power therof, as in Ice. And as Metalls Swell and are Dilated by Heat in and before Fusion, and Contracted again by Cold, so Ice is Dilated by Conglaciation and Contracted again by Melting. And whereas Cold doth not Conglaciare Bodys Actually Cold which have much Potential Heat in them, as Sack is hardly Congeled, and so some very Hot Spirits, and Oils, and the like; it plainly proves Generation to be only the Production out of Potentiality into Actuality. Also Cold may thus not only Congregate Heterogeneous things by Conglaciation, which doth Constipate them in the Consistence therof, but also Segregate them, as Saltwater frozen is more Insipid, and I suppose that which is not frozen is thereby rendred more Briny. And thus also it may Segregate Homogeneous things, as Stones, and the like; which may Crack and Break with Cold, as well as Heat: but I esteem this to be rather a Discontinuation, then a Segregation. And so generaly it renders Bodys more Fragile; as Ice, or Petrified Bodys, Glass, and most notably Steel suddenly Cooled; and so any Iron is more Britle in Frosty Weather;



ther; and Physicians observ the like of Bones of *Animals*. Thus also Cold is a Dissolvent as well as Heat, and doth caus Vitrification and Crystallisation sometimes suddenly; and I suppose might Effect more by long and Mature Generation, if it were tried; for though it is not so strong and quick a Generator as Heat, yet as a weaker Magnetical Virtue *b*, long continuance doth Produce Magnetism in other Bodys; and Violent Tension of a Springe of Steel, if it be long continued will by Degrees overcome the Elastical *Potentia* therof, and make the very Spirit to Conform to that Figure of the Body; so there are many neglected Operators in Nature, which though more weak and dull may in longer time Produce very notable Effects.

IV. As *Æther* Produceth Color, so doth Air Sound; which yet as the other seemeth to me to be no Simple, but a Mift Quality. And though it hath been antiently observed that Color is Mift of Light and Opacity, yet no notice hath been taken of any such Mixture in Sound, which is the great Instrument of Human Speech and Discours, and yet there is none of those other Sensibles, whose Intrinsical Nature is less known unto us. And I find it very difficult farther to explain any thing therof, becaus I want even Common Terms, and words whereby to expresse my Conceptions. I have already propos'd generally, that as Earth hath some Proper Qualitys, as Consistence, and Magnetical Virtue, whereby to Fix itself; so it hath also other Connatural Qualitys in itself, whereby it doth Fix the more Agile Qualitys of the other three Fluid Elements, which also require their Contrary Qualitys, wherewith to be Mift and Contemperated, as well as the sower First Qualitys. And thus we have discovered Opacity to be a Simple Quality Contrary to Light, and that by the Mixture therof Color is Produced. And that as Light is an *Æthereal* Quality, so Opacity is a Terrene Quality; as plainly the Earth is most Opacous, and there are no Fixed Colors without some Terreity, and the most Fixed are in such Bodys as are also Consistent. But yet I fear to seem too Curious and Novell in asserting any such Analogy in Sound; however, as I have promised, I shall adventure, and make a farther Essay therof. And according to the best Musical Terms that I know, shall call the two Simple Contrary Qualitys, which I conceiv to be the Principles of  
Sound,

Sound *Acutum* and *Grave*, or Shrill and Flatt: wherof Shrilnes is the Aereal, and more Agile Quality; and Flatnes the Terrene, and more Fixative Quality: or if we will accept of *Latin* Terms Analogical to Light and Colors, we may call a Sound or Voice wherin Shrilnes doth Predominate, *Vox Clara*; and wherin Flatnes, *Vox Fusca*: but as Pure Light or Pure Opacity are not Visible, so I suppose Pure Shrilnes, or Pure Flatnes, are not Audible, nor indeed that they can Actually Exist in their own Simple Extremitys. And as Light is not the least Degree of Opacity, nor Opacity of Light, but Different and Contrary Qualitys; so that which I intend by *Acutum* and *Grave*, and their Shrilnes and Flatnes is no Degree; as Tones or the several Notes of the *Gamat*, and the like, but Contrary and Different Qualitys. Yet I also observ one general Difference of Degrees between Color and Sound, that is, as all Fixed Colors have a notable Degree of Terreity, which fixeth them, and Desultory Colors less; so Sound, which is only Desultory and Momentaneous Individually, as I have said, requires a less share of Terreity then Desultory Color, though it be commonly Produced by Collision of Terrene Bodys Originally. And as Fire Produced by Collision Originally may fire a whole Train of Gunpowder Successively, so doth the Original Collision Produce Sound, that is afterward Continued by its own Spiritual Quality, which is alway Potentially in all the Air, and Actuated by such Collision of the Air, which hath also, as I have said, some Earth in the Mixture therof, as well as the other Elements (and as we may see Terreous Motes and Corpuscles to float therin). And it is so Produced Instrumentally and Equivocally by Motion, or rather Commotion; for as the Original Instrument therof is Collision, so the Immediate Cause of any Sound is the *Tremor*, which is only caused by Commotion. Wherefore *Aether* and Planets though most Swift Movers, yet because they Move in Fluid Ambient Bodys most Equally, and thereby make no Commotion therof, therefore also they make no Sound, or Noise, or Pythagorean Musike: yea Aqueous or Terreous Bodys so Moving in Air, make little or no Sound; as a *Stella Cadens*, Snow, Rain, Hail, in the fall before they come to the Earth: so a Round and Smooth Bullet, that is not hollow, shot from a Gun makes no Proportionable Noise, because by the swift Motion therof it preventeth the Resistance of the Air, as I have

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said,



said, and so maketh litle or no Commotion therin; whereas a Rod, or Whip, by a Smart Percussion of the Air Resisting it, and thereby suffering a Commotion, maketh a notable Sound; and especially Thunder, which suddenly breaking out of the Cloudy Meteor teareth it asunder, every way, and dasheth it upon the Air, and by sudden Expansion of the Inflamed Lightning maketh such a Terrible Report (like the Flame of Gunpowder out of a Gun) and so fluid Bodys by mutual Resistance, and by the sudden Impuls that will not suffer them to Mingle peaceably, make a Violent Commotion, and Produce Sound; as Water suddenly dashed against Water; whereas in a gentle Flux and Mixture it makes litle or no Commotion, or Sound. But to Continue the Sound, there must be a Continued *Tremor* in the Solid Body, as Bells, Strings, and the like: and where there is no such *Tremor* Originally by Commotion, there is no Sound, as I have said; as in Collision of Wooll; and if it be not Continued the Sound ceaseth; as by stopping a Bell. But any *Tremor* of a Body in the outward *Superficies* thereof, may so caus the Sound to be heard without the Body; as is reported of the *Atites*, and of a Bell of Gold being Closed round with a Stone, or Clapper, within it; and so Commotion under Water, which makes a *Tremor* also in the *Superficies* thereof, may caus a Sound to be heard in the Air; though also Water and Ice, Glass, and the like Teraqueous *Composita* have much Air, as well as Earth, in their Mistions and so may be Proportionably capable of Sound, which is Mist of the two Simple Qualitys, Proper to Air, and Earth. And though this *Tremor* is the most Notable and Immediate Instrument of Sound, yet the Multiplication of the Sound in the Air is, as I have said, only of the Spiritual Quality itself so first Actuated thereby without any more Commotion. And indeed Sound doth not caus any such Undulation or Waveing thereof up and down, like Circles in a Pond, as hath been supposed. Much less is Sound or Voice, though Articulate, any figuration of the Air, of Carving thereof into Characters, like written Letters; for then we could not hear two several Sounds together, as we may if they be very Dissonant; as of a Voice and of a Musical Instrument; or any one Sound of one of the Voices in Consort by attending more to it then to others: and certainly several Auditors may so attend to, and hear several Voices: for the

Figure

Figure of the one Intersecting the other would thereby Diffigure and Deface one another. Nor could an *Echo* then return any Articulate Voice, when the Figured Air is dashed against a Concave Bank or Wall, unless the Bank or Wall had also such Organical Parts, whereby to Figurate it again, and so Return it: but only the Air as I have said, having the sound Actuated in it, and being Reverberated, doth Return it with the Sound in it; which is by a Stop therof, as it may also be Diverted by Wind. And in an *Echo* we only Hear the last Word Because it is last, for the precedent Words by that Stop being overtaken by the following are somewhat drowned, as the last is not. Nor do great Winds or Wafts of the Air caus Proportionable Sounds, unles they Collide the Air against Trees or Houses, or the like, whereby they caus such a Tremor in it; whereas the Motion or Undulation of the Air in itself, causeth neither Tremor, nor Sound. And the Sound or Voice is Continually Propagated in the Air by the first Sound or Voice Actuated in it: and so doth pass away continually; and as it is said, *Nescit Vox missa reverti*; nor can the same Voice (otherwise then by an *Echo*) be heard twice by one man, unles he could fly away Faster then it, and hear it again, as another man doth at a farther Distance, which is Impossible: for it is very swift, though not like Emanant Light of Lightning, which is seen before we hear the Thunder-clap, and if we estimate the distance of the Thunder cloud and different Space of Time, between the first Sight of the Flash, and Hearing of the Clap, we may partly judg of their different Velocitys. Also Sound is very Longinquous, though not so farr as Light Emanant: Broad sides in a late Naval Batell have been heard an hundred Miles from the Place. Nor is Sound Emanant, but always Inherent, though never Immanent, but Transient, and therefore hath no Refraction, nor Reflection of itself; but as the Air (in which it is Inherent) is only Moved by the Wind, which yet doth not wholly Divert it; becaus it is so suddenly Propagated in the Air, and Penetrateth and passeth away more swiftly, then the Body of the Air can Move in itself by any Corporeal Motion: and it is Reflected in an *Echo* only by the Reverberation of the Air itself; otherwise it terminateth and abateth itself by less and less Degrees. And yet while it continnes, it is not Spent, or Exhausted by Hearing, as Odors,



and Savors, which are more Gross, and more Immersed in the Vapors, and Liquors, therof; but a whole Army of Soldiers may all Hear the Oration of their General: which also plainly sheweth it not to be any Figurative, or Corporeal thing, but a most wonderfull Spiritual Quality; which successively and by Innumerable Propagated Individualitys so conveys itself to the very Organ of Hearing, yet not corporeally striking upon the *Tympanum* therof; as Anatomists generally suppose, and so also call some Internal Parts of the Ear by such Significant Names, *Incus* and *Malleus*; for plainly in Hearing we do not Perceive any the least Commotion or *Tremor*, but only the Spiritual Quality itself, which is the Proper Sensible and Object of the Sense; and if we feel any Commotion, as in discharging a Gun neer to the Ear, that is only the Waft of Air which the Ear feels, as any other Part of the Body also may by the Sense of Feeling, but doth Hear only the Vehement Sensible of Sound by the Sense of Hearing. Nor yet are there any Rays of Sound as of Light, so to convey unto the Sense the Image therof, and so several Images to several mens Senses; but only the same Spiritual Quality is so propagated *per omnia*; which is very Admirable and Curious, and deserving more Notice and Consideration then Philosophy hath hitherto bestowed upon it. Also several Sounds do Penetrate one another *per omnia*, so as to Convey the whole Sound in every Point of the Air, and to every Ear within the Sphere therof, and not Confound any of them so being Inherent in the Air, which yet is not only Directed by the Breath of the Speaker, and the like, but also Diverted by Winds, and Reflected by *Echo's*: and several Sounds seem somewhat to hinder and Interrupt one another, if that be not rather an Infirmary of the Sense, then any Confusion of the Sensible Qualitys, as the Ey can not so distinctly See several Visibles, though certainly the Images therof do not Confound one another. And as Spiritual Magnitude, or Ampliation by Multiplication of several Parts into one Total, doth, as I have observed, Augment the whole beyond the Proportions of the Particulars; so many Sounds together are Heard farther then any one of them Singly; as a whole Broadside, or Cry of Hounds; like a great Mountain, which is farther Visible in the Whole then any Part alone could be Seen. And Sound reflected at a great Distance is heard better

better then Directly, but best neer to the Reflection (like Reflected Rays of Heat or Light) becaus though the Reflection doth not make any new figuration of the Sound or Voice, yet it doth Return and Reduplicate it so Generating itself Successively in the Air, as I have shewed. But the greatest Mystery and *Incognitum* is, how the Air which plainly is not Configured or Effigiated by Sound or Voice, but only putt into such or such a *Tremor* by the first Collision therof, whereby the Sound or Voice is first Actuated and Specificated Equivocally, should afterward Univocally Generate it in itself Successively without any more Collision Commotion or *Tremor* in itself. For there seemeth to be none such afterward in the Air; as you may try by a Flame of a Candle or the least Feather hung by a Thread in an upper Chamber, and let the greatest Sound, or Noise, be made under the Chamber window in the open Air, so as the Chamber be not shaken, nor the Waft of Air come toward it, but go the other way from it; which, as I have said, doth not at all concern the Sound: and then observe whether there be any Motion or *Tremor* in the Flame or Feather, more then would be without any such Sound or Noise: certainly it will not be in any maner Proportionable to the greatnes of the Sound or Noise, as it should be if it were the very Sound or Noise. But I shall not Penetrate any farther into this very Curious Secret of Nature, nor Pronounce what Sound is Particularly; only Affirming it generally to be a Spiritual Quality, and not any Corporeal Motion, though it be alway first Equivocally Generated by Motion, which is therefore so Concomitant and Instrumental in it, and perhaps more Necessarily Antecedent then in Hear, or any other Quality whatsoever. Yet we must carefully Distinguish, as I have said, between the very Essence and Formality of any thing, and any most necessary Instrumentality therof whatsoever; otherwise we should know no Difference between our own Bodys and Spirits in this Conjunct State therof. And whosoever will not so Distinguish between the Spiritual Quality of Sound (which is a Proper Sensible and the first Collision Motion and *Tremor* which is only the Equivocal Generator therof, though alway necessarily requisite as an Instrument, and yet, in itself hardly so much as a Common Sensible, nor Perceptible in and with the Sound by the same



Sense of Hearing) seemeth to me to be like unto him who affirmed that he could play upon the Organs, and upon farther Examination it was found that he could only blow the Bellows. Wherefore that we may better consider all together, and carry on this great question concerning Motion throughout, we will Recollect what we have said before, and now also add this unto the rest; And so suppose, as we may very well, the same Air to be *per omnia* Tepid, that is Hot, and Cold, and also Luminous, and now also Sonorous, at the same Time, yea to have many Visible Images and Audible Sounds Penetrating one another, and all that Body of Air wherein they are in every point thereof; and if any Human Invention can find out and assigne so many severall motions, as all these and some more, which I shall heerafter also add in one Body *per omnia* Puncta thereof, and in the same Instant, he may perhaps also Move me from my present Judgment and contrary Opinion.

V. The Aery *Expansum*, which was made to be the Common Passage between the Æther and Terraqueous Globe Transmitting Æthereous Rays Downward, and Aqueous Vapors Upward, hath no Proper and Fixed Inhabitants in itself, but only Vapors or Waters above, and Meteors, which Move up and down, like Birds flying in it; whereas the Æther hath Starrs, and the Terraqueous Globe is the Native Country and Region of Various Elementary *Composita*, Vegetatives, Sensitives, and of Man himself. Nor can I conceive that all these Unnecessary and Deformed Meteors, which now appear in the Air, were so in it when it was first made, or before the Fall of Man; for whose sake, not only Earth, but all the Elements were Accursed; and that Curse hath produced many Sensitive *Anomala*; and not only Briars and Thorns, but also Inundations, Meteors, Comets, and all the Imperfections Monsters and *Anomala* of Nature, which was first made Perfect and truly Natural: and we only read of Vapors then in the Air which are the Natural *Effluvia* of Water, (as Rays are the Emanations of Æther) and most wonderfull *Menstrua*, Vehicles of Spirits, and Instruments of Nature; and it is said expressly that the Excess thereof, which is Rain, and which otherwise may seem most Needfull, and least Noxious, was not then in the Air, and that, God had not yet caused it to Rain upon the

the Earth, which was Watered only with Vapors and that, There went up a Mist from the Earth, and watered the whole face of the Ground; and so also supplied the Fountains Springs and Rivers of Fresh Water. Wherefore, as I have before Ingaged, I shall now plainly prove Vapor to be only Water Rarefied, and not Air. It is expressly so termed in the Text, Waters above, in respect of the other Elementary Water or Waters beneath. And it is Demonstrable that it is so, becaus it hath all the Propertys of Water, and none of Air, except only the Corporeal and Common Affection of Rarity; but as Air if it be never so much Rarefied or Expanded, yet doth not therefore cease to be Air, so neither Water Rarefied into Vapor, to be Water. Also it is not, as I have said, so Cold as Air, but rather Tepid; nor so Diaphanous, but Refracts more; nor so Sonorous, for any Voice is better and farther heard in Sude and Serene Weather, then in Mists and Foggs; and it is confessed by all that it Moistens more then Air, which is the true Property of Water. And we have most Sensible Experiment in the ready Return therof into Water, as well as the Efflux therof from Water, which is only by Condensation and Rarefaction, and no Transpiration. Certainly we may as well affirm Ice to be Earth, as Vapor Air. Nor are all those Bubbles which appear in Expansion of Fluid Bodys always Air, as is supposed, but commonly Vapor; and therefore have a greater aptitude to be Imbibed by Dry Bodys, and to Insinuate themselves into them more then into Pores, into which Air doth more readily enter; and they stick longer to Glass, Stone, Metalls, and the like, then Air; and Moistens more; with many such Symptoms, whereby they may be Discerned, being in themselves of very Different Natures. And we must also Distinguish between Vapors themselves, which are either Produced by the more gentle and Calefactive Power of Heat, and were, as I have said, so made in this Second Day, and readily Return again into Water; as in Rain, or any Distillation, and still continue Actually Moist; and these Vapors are also more Fluid, and only Conglomerate together with little Consistence in more Dark Mists and Foggs in the Air, such as we see to rise from Rivers and Vallys in a Morning, or Evening; yet they are not Common Elementary Water or Waters beneath, but Waters above; which therefore  
are



are so easily Transmuted, Neither are Clouds any Cisterns, Membranes, or Sponges, containing Rain; for indeed Rain-water is such a Ponderous Body as could not Possibly be Suspended in the Air, but would fall down in Cataracts, and destroy the *Terricole*; whereas these Vapors being suddenly Rarefied by Heat, and as suddenly Condensated again by Cold, or Comprest by Wind, do accordingly Descend leasurely in greater or less Drops, and the main Body thereof is in the mean time carried about to Water a greater Space of Ground; and so Dews, which are Vapors not drawn up so forcibly, nor so high, (commonly by the Nocturnal *Tepor*,) soon fall down again upon Trees and Herbs, and are there collected and hang in Drops. And if the Air be very Cold, whereby these Moist Vapors are Congelated, then accordingly they either fall in Hail (as Icicles, and *Stiria* in some Cold Caverns of the Earth) and by their very Stillicidation and Agitation are formed into such Corpuscular Figures, which could not be, if they had ever been one Intire Body of Ice in the Air. And if the Cold be not so Intens, and the Vapors much Agitated before and in their Congelation, then they are turned into Snow, which is only frozen Spume, and being a Lighter Body is therefore longer Suspended in the Air, and there Congel'd in whole Lumps as appears plainly in the Alps, but falling lower in our lower Regions breaks into Flakes. And Dews which do not Ascend higher are turned into Frosts. Or there is another kind of Vapor Produced by the more Violent and Caustike Power of Heat, and which is Burne and Adust thereby, and therefore we call it, Fume, or Smoak; which is more Desiccated and Consistent, and hath such Terrene Qualitys, wherewith Water is Mist, Actuated in it; and so will continue longer, and is rather Actually Dry then Moist. And there are some such Dry Mists lower in Summer; and they portend Dry Weather commonly; And of these Fumes are the Bright Clouds (which indeed are more Properly Clouds, and have a particular Name in Hebrew) Composed; and they are usualy higher in the Air then the others, being so raised by the greater Heat, and so the Sky is also Exprest by their Name. And more moist Thunderclouds which are of the other kind and usualy Resolved into Rain are lower then these Bright Clouds, and many times go one way while the others go another way.

But

But I suppose that these Bright Clouds (which are therefore so called becauf they do more Equally Reflect the Sun beams like a Molten *Speculum* as hath been said) commonly are not Resolved into Rain, and therefore are termed *Clouds without Water*, but that according to the Hebraical Etymology by farther Concoction and Condensation or Compression and the Agitation of the Air they are at length broken and Comminuted into those little Bodys or Pulviscles which we call Motes, and are Visibly seen in Sun beams, and continue so in the Air floating up and down longer then any dust of the Earth (or, as the Poet calleth it, Cloud of Dust) which almost as suddenly falleth as it riseth; Whereas these being more Fuliginous and Light do wander up and down much longer; though at length they also Descend and Subside on the Earth, otherwise they should clogg and choak the Atmosphere; which yet is usualy replenished with them, and we drink them in continually as Horses do Mudd the Water to thicken it; And so Fishes Introsuct Air, which contrarily doth Temper their more Dens Drink and make it more Thin, and which they suck in and through the Water, as I have shewed in the Torricellian Experiment, and when they would suck it in more freely come toward the Top of the Water, whereby the Air in the Introsuction therof passeth through a less Strainer, and they cannot long Live without some Introsuction of Air; as appears in Ponds frozen, wherein we use to break Holes in the Ice for that purpose; and accordingly the Fishes come to them, even to the very Top of the Water, to Refresh themselves with the fresh Air, which they there Introsuct, and are so greedy of it, or sick for want of it, that they are easily taken: though also several sorts of Fishes require severally more Rare or more Dens Drink, as River fish will be stifled with Mudding the Water, and Seafish grow faint in fresh Water, and the like. And indeed our Atmosphere is not nor may not be pure Air, as is found by them who have been in the Tops of the *Andes*, and by the Experiments of Birds and Beasts in the Airpump or *expansor*, which are almost Exanimated thereby; and also by the Tension and Elasticity of the Air which is able to draw up Mercury in the *Stagnum*, and very considerable Weights: And Breathing is not only Spiration, but Reciprocaly Inspiration or Drinking in of Air; And there is much



more Inspired then Respired, which is the Atmospherical Drink, and perhaps some kind of Aliment of the Spirits, but very much Vapor is Excreted by Perspiration. And there is very great Difference of the Atmosphere in several Habitations, Higher, or Lower; as may appear by the *Pycnometer*. But I conceive generally that such a Temper of the Atmosphere, as was in the first *Expansion*, is most desirable and healthfull; which, whatsoever it might be otherwise, was rather Mingled with Vapor or Waters above then with Fume; And it is requisite in an Healthfull Air also that Excrementitious Vapors as well as Fumes, which continually Ascend into the Air, be Purged and Dispersed continually by Wind, or some Agitation of Open Air, and therefore Close Rooms are very Offensive, and almost Stifle the Breath, especially if they be Vaporous as newly Plasterd, or With a Charcoal Fire in them, which strangely Alters the Air by a sudden and vehement Rarefaction; And because the Water doth most evaporate, therefore there is a chief Consideration to be had therof, whether it be Pure, or Moorish or Brackish; for Salt also will be Volatilised, as I have said; and because the Earth doth also Evaporate, and not only the Vapors therein, but Rarefied Corpuscles of Earth do also Ascend with the Vapors, Consideration is to be had therof; as whether it be Sandy or Chalky, which Emitt least or best Corpuscles, or Fenny or Slimy, which are worst. So that in the Situation of Houses there is also regard to be had of the Soil, and of the Atmosphere, which is an Aliment, or at least a great and continual Instrument of Life, and must be Considered as some part of Houskeeping. The Wind which Purifys the Atmosphere is rightly termed *Aer Motus*, (as the same *Hebrew* word signifys both) and I easily grant it to be no special Quality in itself, but only Motion and Agitation of the Air which is a very Fluid and Mobile Body, and is Moved Variously by the Vapors Variously Ascending into it, and other Meteors in it, and such Circumstantial Causalities, more or less Condensating or Rarefying it, and which render the Weathercock as Unstable as the Weather-glass. And where the Motion begins, it drives forward the Parts of the Mobile Body of the Air one upon another; and where they find any Vent or Passage, they being in Motion flow thither, like Water; whereby in some places there are more Constant *Etesia*, and Tradewinds, as they call

call them, like *Vento's* or Ventiducts made by Art; and this was one of *Columbus* his Arguments that there was more Earth. And as the Winds are thus caused by Vapors, so the Southern parts of the World being more Watery, are therefore, as I have said, more Tepid or Warm, and Rainy or Misty; and the Northern parts being more Terreous, and Emitting more of the Terreitys, therefore the Northwind is contrariely more Cold and Dry. And the Sun in the Diurnal Motion of the *Æther* being carried from East to West, and so better Concocting the Vapors which he hath before raised and passed over in such his Diurnal Course, therefore generally Eastern Winds are also more Cold and Dry, and Western Warmer and Moister; and some Winds are observed to Rise and Fall with the Rising and Setting of the Sun. But if any Wind or Weather be so Copious and Durable as to be carried about the whole Terraqueous Globe, then the same Wind may be of a Contrary Temper from the same Cause; and so many times Rains come from the North and East; and commonly they are very great, because they are so Copious and Durable; and so in *Africa*, and other hot Climes, there are Infrequent Rains, but when they happen they are Excessive, because the Sun doth very Copiously raise Vapors, and if it happen by any Circumstantial Causality that he can not Concremate and Desiccate them as much, they all turn into Rain. And so the Hot Meteor of a Thunder-cloud draws very Copious and Dark Vapors, which, when the Heat breaks forth in Lightning, are presently Resolved into Rain: though otherwise, when there are few other such Vapors in the Air neer to it, there are also dry Lightnings without any great Noise; because they are not Exploded out of such Clouds as the others: and Thunder-clouds may go against the Wind, as we say; because they are Moved and Impelled by their own Heat, and by their great Commotion after the Explosion of the Lightning they commonly turn the Wind. And Concurrent Causes may Move and Impell the Mobile Air every way, and when it cannot Move fast enough Progressively, then, as I have said, it must Move Circularly; whereby it becomes a *Turbo* or Whirlwind, which I conceive rather to be such, than all the Winds blowing against one another. *Ignes fatui* are Inflamed Exhalations, more Lucid, and less Fiery, having some Fatt and Viscous Corpuscles of Earth in their Mixture; and arise generally from such Soils.



And if they be more Igneous, and more Rarefied thereby, they are better Concocted, and Ascend higher, and become *Stella Cadentes*, and the like, which fall down again when that Heat is Extinct. But these Fiery Meteors which last longer, are not comparably Igneous like *Fulgur* or Lightning, which having a most Rare and Subtile *Fomes*, and being also pent in and Condensated in the Cloud, when it breaks forth, doth not only make a Terrible Nois by the sudden Collision of the Cloud every way against the Air, but also by that sudden Eruption, as well as by the Spiritual Power therof, doth wonderful Execution, and is strangely Influential; and I suppose of all Culinary Fire is most like to *Ethereal*; but I cannot conceive that it can so Calcine any part of the Cloud as to forge a *Fulmen*, Thunderbolt, or Stone; though I acknowledg that there is much Earth also in it; wherof as well as of the Water, some Insects, as Tadpols, and others are found to be Produced after Rain. All which Violent and Excessive Meteors are, as I have said, general Effects of the Divine Curs; and so Thunder is called the Voice of God; and ought to be regarded: but I do not apprehend these general Effects to be any such special Prodigys and Portents, as some would have them to be. The *Iris*, and the like, are Properly no Meteors, but only Reflections of the Sun-beams from a Vaporious Cloud like a Prism, being also more Opacous then the Bright Clouds. And I doubt not but that there were Rainbows before the Deluge, (though not before the Fall) as well as Lambs before the Pass-over, Water and Bread and Wine before Baptism and the Lords Supper: for all such Sacramental Elements are in themselves Natural, and only supernaturally Instituted to be Symbolical Signes; and so was the Rainbow, which signifys Sunshine after Rain, and doth very fitly declare the Covenant that God made with *Noah*; that as he and his Family were then saved from the Deluge, so it should never after come upon his Posterity: and as God said, *I will look upon it, that I may remember the everlasting Covenant between God and every Living Creature of all flesh that is upon the Earth*, so should we, when we behold this his Bow in the Clouds, thankfully remember his wonderful Deliverance; both that which is past, wherin we all who were then in the loins of *Noah's* Sons were preserved, and also future; concerning which God hath given us such an everlasting Covenant, and this Signe therof.

## SECTION IX.

And God said, Let the Waters under the Heavens be gathered into one place, and let the Dry Land appear. And it was so, And God called the Dry Land Earth, and the gathering together of the Waters called he Seas. And God saw that it was Good. And God said, Let the Earth bring forth Grass, the Herb yielding Seed, and the Fruit Tree yielding Seed after his kind, whose Seed is in itself, upon the Earth. And it was so, And the Earth brought forth Grass, and Herb yielding Seed after his Kind, and the Tree yielding Fruit, whose Seed was in itself after his Kind. And God saw that it was Good. And the Evening and the Morning Were the Third Day.

## EXPLICATION.

God having before caused part of the Water to ascend in Vapors into the Air, did afterward cause the rest to subside, and be derived into certain Canales in the Earth, which he had also prepared for it: and so made the Surface of the Earth, which before was covered with

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Water.



Water, to appear together with it in one Terraqueous Globe; wherof the Dry Land was Earth, and the *Confluvia* of Waters Seas. And this Ordination of all these three Elements was their Goodness and Perfection. And when God had thus prepared all the fower Elements, he caused the Earth, being pregnant with Vegetative Principles, accordingly to bring forth Grass, Herbs, and Trees, above the Surface therof, after their several Kinds: and the Herbs and Trees had also their several Seeds and Seminal Virtues in themselves, whereby to Propagate and Multiply afterward. And this was their Goodness and Perfection. And all these were the Works of the Third Day.

### ILLUSTRATION.

1. Of water. 2. Of Moisture. 3. Of Odors and Savors.
4. Of the Flux and Reflux of waters. 5. Of Earth.
6. Of Drines. 7. Of Consistence. 8. Of Magnetical Virtue and Electricity. 9. Of the Immobility of the Earth.
10. Of Vegetatives. 11. Of the Goodnes of the Works of the Second and Third Days.

I. **T**He Water which is Elementary and more properly such, and wherof Vapor and Ice are only Various, is next to Air above it, both in Situation, and Nature, as may appear by Vapor, and to Earth beneath it, as may appear by Ice. And though Earth and Water were in this Third Day made, and still are, one Terraqueous Globe; yet as they were Created in the Beginning, so they still are several and different Elements; aswell as Air and *Aether* are several and different Heavens. And though they are thus Composed into one Globe, yet they have their several Provinces therin, as well as the others, though not in the same manner or Figure. And so it is said not only that Dry Land did appear, which was before covered with the Sphere of Water, as that was with

with Air, and Air with Æther, but also that there was a gathering together of the Waters into one place, generally, wherunto all Rivers do run, though branched out into several Canales: and though standing Ponds, Lakes, and perhaps some Gulphs or Seas, as the *Caspian Sea*, may not communicate with the Ocean, yet they are also *Confluvia*, and Seas, and so termed distributively afterward, and all of them distinguished from the Waters which first covered the Earth all over; whereas now the main Ocean covereth and compasseth it about only in one place. And as these Waters beneath flow from the Earth, so they are still above it; as the Waters above floating in the Air, are also said to be above or upon it (for so the word signifies upon or above, and so Fowl are said to fly above, or upon the Heavens) and as they are thus distinguished from Waters beneath, so are also those Waters above the Earth from Waters beneath the Earth, that is, Subterraneous Fountains, or depths of the Seas: for neither are any Waters under the whole Earth, which is most Dens, and consequently lowest; nor above any of the whole Heavens, Superæther, Æther, or Air itself, which are more Rare, and consequently Higher, as I have shewed: but these Expressions concerning the Vapors and Fountains are Respective, according to the Subject Matter, and not to be understood Absolutely; and they do indicate several Regions of the Waters, whereas we have no such indication of any several Regions in the Air or Æther, as I have observed. Also though the Evaporation of Waters by Heat be Natural, and only Supernaturally produced by God in the Second Day, as his other Works of Improper Creation were in other Days; yet this Distribution of Earth and Waters in the Terraqueous Globe thereof, which was so Composed in this Third Day, seems more Extraordinary, and Artificial, and such as doth most plainly declare the Immediate Operation of God in this, and all the other Days: for by what Natural Power could the Earth and Isles be raised above the Waters? or the Mountains and Vallies be so ordered and Indented? or who could cast those great Banks of the Shores, and cut those vast Chanells of the Seas and Rivers, or say unto them, thither shall ye go and no farther? which therefore God is said Originally to do by Line and Levell; as in Waterworks, we so set them out that they may run to their Levell this way or that way in the Cuts prepared for them. And though men may make such less alterations.



rations therein, and some greater have been made by accidental Breaches and Inundations, yet as God saith, *I brake up for it my Decreed place* (or as it is Originally, established my Decree upon it) *and sett Barrs and Doors*, so generally and in the main it continues the same: and since that Great and Universal Deluge, yet Cosmographers can still find out those Seas, Rivers, and Isles, which *Moses* declareth to have been before it. And thus the Divine Psalmist describeth both the Proper and Improper Creation of Waters and Earth, *Thou coveredst it with the Deep, as with a Garment; the Waters stood above the Mountains. At thy rebuke they fled, at the Voice of thy Thunder they hasted away. They go up by the Mountains, they go down by the Valleys, unto the place that thou hast founded for them. Thou hast sett a Bound that they might not pass, that they turn not again to cover the Earth*, and so proceeds to shew the great Usefulness therof, which thereby God prepared both for Vegetatives and Sensitives in the whole *Oecumene* or Habitable Earth. But though the Earth generally is thus raised above the Waters, not only in the Mountains and Summits therof, but in its whole *Campus*, which lyeth above the Levell of the Waters; yet the Water, in its own Province, is above the Earth, on which it flows; and so the Earth is very elegantly expressed *standing out of the Water, and in the Water*. And whereas it is said that God founded it upon (or above) the Seas, and established it upon (or above) the Floods; it is very true and proper according to the Subject Matter, wherof the Psalmist there speaks; that is, of the *Oecumene* or Habitable Earth, as it was so raised above the Waters, which before were above it; and thereby was made fruitfull and Habitable: which the precedent Context doth plainly declare, *The Earth is the Lords and the fulnes therof, the World and all that dwell therein*: nor do I apprehend that the whole World of Spheres, Aereal, Æthereal, and Superæthereal, is there intended; though the Author of *Esdras* saith also, that the Heavens are founded upon the Waters: but I rather conceive that by World is there meant *Orbis Terra*, as it is usually so taken Hebraically, and in all other Languages, because the Earth is our present World; and so more restrictively we say the Christian World, and the like. But how farr the Waters are beneath the Levell or *Campus* of the Earth is not particularly expressed; yet we read of a great Deep or Ocean, and of Fountains therof or therein;

therin ; (as we so say *Fons Blundusii*, and the like) not that there is, besides the Ocean, any Fountain thereof beneath it, which feeds and supplys it ; for it is called the Deep, because it is the deepest of all Waters : and so Fountains and Depths of Waters are used indifferently, as it is said, *A Land of Brooks of Water, of Fountains, and Depths, that spring out of Vallys and Hills* : and both are said to be under the Earth ; wherefore because Rain and Waters in those dry Countrys were accounted great Blessings, *Jacob* blesteth *Joseph* with *Blessings of Heaven above, and Blessings of the deep that lieth under*, which *Moses* also repeateth : nor is it said that there is a Deep, and also Fountains thereof, beneath, and besides it, but they are alway termed the Fountains of the Deep, not only in respect of itself, but also of all Vapors, Rain and Rivers, wherof the Deep or Sea is the Fountain ; to which that expression seems to refer, for so they are joined together, as it is said, that there were *the Fountains of the Great Deep broken up, and the Windows of Heaven were opened* : and indeed they are so made to be Fountains one unto another mutually and reciprocally, as I shall shew heerafter : and in the Deluge, the Conflux of all the Waters was gathered together, to cover the whole Earth, not as it did at first equally cover the whole Surface thereof, but the Canales, *Campus*, and highest Hills, as they then stood and continued : *fifteen Cubits did the Waters prevail, and the Mountains were covered*. Whereby we may partly estimate the quantity of the whole Body of Waters, which yet may be Rarefied or Condensated more or less : nor can we exactly tell what is the Proportion of the Surface of the Waters to the Surface of Dry Land in the whole Terraqueous Globe. The Author of *Esdras* saith, *Upon the Third Day thou didst command that the Waters should be gathered in the Seaventh part of the Earth ; Six parts hast thou dried up* ; which might probably also have encouraged *Columbus* in his happy confidence of more Earth then was discovered before him, and according to this account there should still be much *Terra Incognita*. The Density of the Body of Air more then of Water hath been observed to be as about a Thousand to One, and yet Waters beneath are Rarefied into Vapors or Waters above, which are as Rare as Air itself ; for Vapors and Fumes do not ascend into the Air by Impulsion of one part after another, as Water may be squirted upward out of a Syringe, or as they are called *Pillars of Smoak* in



respect of the Figure therof; but if a *Titio* or Brand be held downward in the open Air, yet the Smoak therof will ascend upward, or remain suspended: and perhaps some Vaporuous Meteors are Indefinitely in the Air or any Region therof, even the highest Surface, and so said to be upon it, as I have shewed. And I shall heer observ, that as Vapors, or Waters above, were so made by special Creation in the Second Day, so they are of special Use and Consideration, being a very Subtile and Spirituous *Effluvium*, and a notable Instrument of Nature, and also a *Mensstruum* carrying forth with it not only part of the Body, but also much of the Spirit: and this is indeed that which Chymists commonly call, Spirit, as it so carrieth forth the Spiritual Qualitys with itself; being a very fitt Vehicle therof: whence some have fancied a Conversion and Transpeciation in itself, which I have already refuted: but certainly it causeth a very great Alteration of the Bodys out of which it is emitted, and Translation of the Spirits therof; being not so Dens or Consistent as Earth, nor as Water out of which it is produced; and almost as Rare as Air and Æther: and so Intercedeth and Mediateth between all the Elements, and doth Evoke the Spirits therof; as is commonly observed of the firmest Timber, that if it be often Wett and Dry again, it soon Rotts; which also takes away the State of Hay, as Husbandmen say, in their Chymical expression therof. Yea, I suppose, that what is intended by the famous Chymical Term of Fermentation is only the Operation of a Hott Spirit on a Moist, Intrinsicall within the Body therof, by Vaporation; which plainly discovers itself accordingly by some Turgescence and Ebullition; and whereby the Benigne and Homogeneous Spirits are better Concocted and more equally Distributed, which doth exceedingly Meliorate and Maturate; and the more Maligne and Heterogeneous do Evaporate, or otherwise the Spirits being in agitation, by any Intemperate Excess, or Defect, become more Corrupt and Putrid. Thus Heat and Moisture Operating and Fermenting within Bodys produce all Elementary Generation and Corruption, and are thereby also very subservient to Vegetation, and Vivification. Now as I said before of Air, so the very Spirit of Water is unknown to us, nor have we any apt *Vocabulum* therof; or if we had, yet we could not thereby know the Substantial Spirit itself, or the Nature therof; but only by those Accidents

dents or Spiritual Qualities, wherof I shall now proceed to discourse.

II. The first or principal Quality of Water is Moisture, as I have already proved: and indeed, unless Water be Moist, I neither know what is Water, nor what is Moisture. And I suppose that Elementary Water is most Moist, that is, it doth Moisten most strongly, though Vapor, being more Rare and Subtile, may sooner penetrate; as Fixed Fire doth certainly Heat most, though Volatile Flame doth most penetrate: and yet when Vapor hath thus penetrated, it doth most Moisten by being Condensated again into Water: but Vapor may be also Adusted and turned into Smoak, which is Actually Dry, as I have shewed, and that cannot be supposed of Water Immediately, untill it be first turned into Vapor. And Oil seemeth to Moisten more then Elementary Water, because it is more Unctuous, and Evaporateth less, whereby it retains the Moisture longer; as a boiling pot of Water being covered, doth retain the Vapor and Moisture more then uncovered, and therefore that Water is longer in boiling away, and so is Oil then Water; thus though pure Water doth, as I said, Moisten most, because Moisture is the Proper Quality thereof, and all others Moisten only by participation of Water; yet it doth also Evaporate most, whereby it becomes Vapor and Water above, which is also another Proper Quality thereof, and thereby dries away soonest. Also though it moisten most, yet in Washing it may be advantaged by other Bodys; as pure Water doth not Rens or Scowr so well, as if it be mingled with Earthy particles of Chalk, Marl, Bran, or the like, which render it more Absterfive, and make it, as Huswives say, bear Soap better; because those Terreous Corpuscles do Imbibe Unctuous Bodys better then Water, and thereby reconcile them together, yet not without heating, beating, laving, or the like: and so Water and Milk mingle together, the Oleous parts of the *Butyrum* being reconciled to the Water by the *Serum*; whereas Butter itself, Oil, Turpentine, Mercury, and the like, will not so easily mingle with Water; because they are not so Aqueous; which appears by their less Evaporation: nor will Water easily mingle with Vapor, while they continue such; because God hath so vastly differenced them in their Creation, that they shall be either Waters beneath, or Wa-



ters above; whose different Density is as a Thousand to One, and they can hardly continue in any of those thousand Degrees between them, though they pass from one to the other by them all; as may appear by the Motion of Water boiling in a pott, which first is scarcely seen to Move, and then Simpers, as they say, and so boils up more and more, though they will continue in some Degrees beyond that proportion, as Meteors in any Region of the Air. And Evaporation is such a notable Property of Water, and Symptom of the Aqueous Nature, that I suppose all Elementary Water, if it be not frozen with Cold, will Evaporate always with any Degree of Heat, or *Teper*; as certainly it will in a Cold Still; though proportionably less with less, and more with more Heat: and so even those winds, which we call Cold from that Predominant Quality, do Dry notably, by carrying away the Vapors, which even then do arise, whereby others may more freely succeed, (as I said concerning the boiling pott, and so it may be observed in Saltworks, or the like.) But though such more Heterogeneous, and less Aqueous Bodys, as Butter, Oil, Turpentine, and the like, will not easily mingle with Water, or other such Bodys; nor become Continuous with them: yet if they be Fluid, they may be notably Contiguous, because they can conjoin themselves to every part and pore thereof; and do notably Cohere to and with Consistent Bodys by their own Unctuous Glutinosity: yea, even Water itself, though neither Unctuous, nor Glutinous, so will Cohere; and so would Mercury also, if the Weight thereof did not overway it. And, I suppose, the Experiment of the Capillar Tube to be from this Cohesion and the Homogeneity of Water, and another Conjunct Reason (which I shall assigne afterward) for I know no such Spiritual Homogeneity between Water and Glass, which is rather Terreous (though Poets call Water Vitreous) but as I have shewed the whole Body of Matter is Homogeneous in itself, and Continuous with itself, though Spirits may be Heterogeneous, and by their Heterogeneity Discontinue their Bodys of Matter; therefore, as when by reason of their Consistence, or otherwise, they cannot perfectly close together, other Bodys do and must Intervene, to prevent Vacuity; so when themselves can so close, they also in like manner prevent it themselves, and so need nor, but rather exclude the Intervention of any other Bodys by their own Præpossession; whether such Contiguous Bodys be Homogeneous,

mogeneous, or Heterogeneous; becaus they are all Bodys of Matter, whatsoever their Spirits may be: and so polished Metalls will Cohere to Marble, aswell as Metall to Metall, or Marble to Marble: and thus Water being Naturally as Smooth, and of as equal a Surface, as any Glas can be made Artificially, and being Contiguous to the Capillar Glas, doth notably Cohere, as it will to any Smooth Glas, so that it can very hardly be shaken off by swinging, or the like; though it will more easily slide by its own Weight or *Pondus*, as polished Marbles will one from another being moved by any *Potentia*, whereby Air may succeed at the Edges therof; though otherwise they will not be pulled one from another Parpendicularly with less Power then if they were so farr Imperfectly Continuous: and so according to the proportionable Weight of the Water in the Capillar Tube, it doth descend and depart from its Contiguity. And thus the Inside of the Tube of Glas, (which is therefore Capillar, becaus the Cavity therof is not much bigger then an Hair) being Madesied, either by other Water, or by the Vapor of that Water wherein it stands (which as I have said doth always Evaporate, if it be not obstructed) Madesying the Glas by Degrees, though very slowly, and in much longer time, and the Glas being either way Madesied with Water in the Inside therof, which, as I said, sticks so closely to the Consistent Body therof, and reaching down to the Water wherein it stands, and which is Homogeneous with it, both the Waters do mingle, and would flow together, as all Aqueous Bodys Naturally do; and becaus the Water in which it stands being Stagnant, and having no Actual Weight, cannot draw the other down to itself being so strongly Coherent to the Inside of the Glas, as I have shewed that upper Water according to the strength of the Cohesion draws up the lower Water to itself, so long, and so high, untill the Weight of the Water so drawn up doth oversway it; and accordingly it lifts up and keeps suspended a proportionable *Cylinder* of Water, higher, or lower, as the Cavity of the Tube is less, or greater; and becaus that *Cylinder* of Water is supported, as I said, by the Cohesion to the Sides of the Tube, which is therefore strongest at the Sides, the Water so supported is there highest, and so less, and less, and lowest in the midst; whereby the Surface of the *Cylinder* becomes Concave: whereas Mercury will not so ascend by reason of its over-weight, which, as I have said,



doth prevail against any such Cohesion with Glass; and therefore also if the Capillar Tube be sett in it, the Surface within the Orifice thereof will not be Concave, but Convex; because by the Orifice of the Tube, the Mercury, which is a farr more Consistent Body then Water, is deprest most at the Sides, and so thereby less, and less, and therefore is highest in the midst. Also Water hath some Consistence in it from the Terreity, that is in the Mixture thereof; and this is the other Concurrent Reason which I before intimated; for if it were wholly Consistent, as Earth; or Fluid, as Ether, the Experiment would not Succeed; but by the partial Consistence thereof, it doth also somewhat Rope, as we say, or hang together, and so by the Homogeneity of the Water in the Tube, and that wherein it stands, meeting and mingling together, and being apt to flow together one way or other, the Water in the Tube, having the advantage of Cohesion, and Prevalence thereof above the Weight of the Water in which it stands, doth so farr draw it up, untill they both become Equipollent, and then there they stand. And thus if you fill a Glass Cruet almost to the top with Water, and then incline it toward the Nose thereof, so as the Water may run farther into it then when it stood erected Perpendicularly, and then very gently reverse it, and erect it again Perpendicularly as before; the Water will stand in the Nose proportionably above the Levell thereof in the Neck of the Cruet, as it will in the Capillar Tube; and both are from the same Concurrent Reasons, which I have declared. Nor do we discover the Symptoms of any other Motions of the Water afterward, or any farther advantage gained by such Elevation thereof, neither will it so run in a *Siphon* higher, or more swiftly, then it would do otherwise. And though the Subsiliency of the Water in the Capillar Tube be very quick, and *per Saltum*, (as generally such Motions are) yet it is not very strong, as you may perceiv, if you stop the upper Orifice of the Tube with your Finger, which will hinder the Ascent thereof, because it hath not sufficient strength to Compress the Included Air. But this Experiment plainly discovers the Continuity of Matter, and Spiritual Appetite of Union, that is between Homogeneous Natures, especially Elementary, being next to Matter, which can never be Disunited from itself, as Material Spirits and their Bodys may be; which yet being Actually United, will flow together, if they may, and cannot be so easily

easily Divelled, as Heterogeneous. And it shews that there is some Earthy Consistence, even in Water; which appears also in Bubbles, that are as Skins of Water including Air; and as the Heterogeneous Air doth Conglobate within, which makes the Bubble Spherical, so it doth thereby resist the Air without. Also not only thicker Liquors, but even standing Water hath some such Skin upon it; so that a Needle very gently laid upon it will not sink so fast at first, as when it hath broken through that Skin: And so we see such Cobwebs on the ground, as Husbandmen call them; but this Terreity most notably appears in Vapor Aduft, or Fume, which turns into a Soot in Chimneys not only as Motes, but in larger Pulviscles; and so in Conglaciation of Ice, which discover plainly a Mixture of Drines and Consistence, that are Earthy Qualitys, with the Moisture of Water: Also we may observe how in Filtration Water ascends, as in the Capillar Tube, but by many Steps and Degrees; and then descends by the Overweight, as in the *Siphon*; and as it would in the Capillar Tube so made, and posited, and then made fixed; but not otherwise.

III. Though I suppose there may be several other Simple Qualitys both of Air, and Water, besides the First, as they are called, that is, Cold of Air, and Moisture of Water, as well as Light and others, besides Heat, in *Æther*; and Consistence and others, besides Drines, in Earth; yet becaus they are not so obvious, I shall not now hunt after them farther then I meet with them in such Sensibles, wherein I conceiv Water and some Simple Quality therof to be Predominant, as I have before observed of Color, and Sound. Now these Aqueous Sensibles are Odors, and Savors; and as God divided the Waters into Water beneath, and above, or Gross Water, and Subtile Vapor; so these two several Sensibles are severally Inherent in them, that is, Odor in the Vapor and *Effluvium*, and Sapor in the Grosser Water. And yet Odor is more Gross then Sound, as Sound is then Color, and neither Transient as Sound, nor Emanant as Color, but more Fixed and Inherent in the Odorous *Effluvium*; and is accordingly varied and carried away with it: and as the Vapor is more Dens, or Rare, so generally is the Odor more Gross, or Fine: and as the Vapor, so the Odor, is more Dens and Gross, as it is more near



to the Aqueous Body; and more Rare and Fine as it is farther Effluent from it, and more Dispersed thereby: and yet there is a very longinquous Efflux and Wast of Odors in such diffusion of Vapors; as is sensibly perceived by the Sent of Heaths of Rosemary very far at Sea, and by the Convolution of Ravens and Vulturs to Carcasses very farr distant. Also as Odors are of an Aqueous nature, so there is a very quick and permanent Adhesion therof to Moist Bodys; for so the Sent of an Hares or Deers Foot continues long on the Moist ground in every *Vestigium* therof, though they run very swiftly over it; which could not be so detained without the Subtile Vapor, in which it is Inherent, and which sticketh to the ground; and is not so easily discharged as a Cloud of Breath from a Dish of Pewter, or Silver, or such other Bodys which are less Moist: yet as the Subtile *Effluvium* of Odorous Vapors is emitted from the Body which is the Fountain therof, so that Body itself also is Odorous, having its own Inherent Odor, and may be sented by the Odorous Vapors as they pass out of it into the Nostrills; and though Drines may Predominate in it, yet if it be not so Dry, or such a *Caput Mortuum* as doth amitt no Vapors, which very few Bodys do; it may have a Sent, and that very strong and vehement; as Spices, and the like; becauf such Vapors are also more strong, and there is a Terreous Quality, as well as Aqueous, wherof Odor is Compounded, as I shall afterward shew: but commonly the Odorous Evaporation is more Actuated and produced by Moisture; as Flowers and Herbs after Rain smell more sweetly: and Dry or Unctuous Perfumes, by Infrication of the Powder, or Imbibition of the Oil or Butter, are more strong and durable; becauf thereby there is an Incorporation of the very Odorous Bodys, which are the Fountains of the Odors, as I said: and generally all Dissolutions, either by Maceration Externally, or Putrefaction Internally, whereby the Vapors are more freely Emitted, and the Odors Actuated, do caus greater Sents: also long restraint of the Actual Vapors and Odors, as in close Vessels, or Rooms, when they are first opened cause stronger Smells, becauf they are so Copious. Now as Odor is a Proper Sensible in itself, so it is also Previous to Sapor, and Smelling, as it were, a Pregustator of the Sent of Taste; becauf Odor and Sapor, as I said, are Connatural Qualitys chiefly Subsisting in the same Element of Water; though they are very different

rent in themselves, as Heat and Light are in *Æther*, and perhaps more, because they are not Simple, but Compounded with other Terreous Qualitys, and require such several Bodys of their own Element, as Waters above, and beneath; and certainly they must so differ, because they are several Sensibles of several Senses, which also very sensibly proves Heat and Light to be Really Different, because Heat is an Object of Tact, and Light of Sight. Thus there may be more Odor, or more pleasing or displeasing, then Sapor; and so convertibly, in the same Body; but such as are of fetid Savors have also commonly fetid Odors, and pleasing Savors no displeasing Odors. And I suppose that vehement and strong Odors or Vapors in any Body do indicate and declare it to be some notable *Pharmacum*, especially if they be such as are not very grateful to the Senses, which declare it to be not of any Dietical, or ordinary, but extraordinary Use and Virtue. Now as it is evident, that Actual Odors are Immediately Inherent in Vaporious *Effluvia*, which the very Organ of Smelling, that is, the Mammillary Processes, do sufficiently attest, being situated above the *Nares*, through which, as Tonells, those Vapors do pass; so it is as apparent that Savors do Inhere in the Watery Juice of the Sapid Body, because if that be expressed, it becomes Insipid and the expressed Juice more Sapid, as Wine, Cider, Perry, Gravy or Juice of Fleishmeat, and the like. And it also appears to me that Odors or Savors are no Simple Qualitys of Water only, (as Sound and Color are not of Air, or *Æther* only) but that they are all Misd with some Terreous Simple Qualitys, which are unknown to us, what they are, and yet we may also know, that they are not Odorous or Saporous in themselves; because Elementary Water, or Earth, do not either Smell, or Taste much; as Lucidity and Opacity are not much seen of themselves, and indeed not without the advantage of Conspissation or some small Misdion, or the like: but, as I confess, I first derived this Notion from the antient Philosophers, who have discovered *Lucidum* and *Opacum* to be the Principles of Color, which I have thus farr improved and produced to the other three Sensibles, Sound, Odor, and Sapor, that is, all the proper Sensibles, except the fower first Qualitys (which are also in themselves Simple, and Misd to be made Sensible, being too strong and vehement in their own Elementary Bodys) and they are indeed Social, and perhaps Auxiliary Qualitys, with all



and every the Simple Quality of the other Sensibles; as their Proper Sens, which is Taſt, is the Fundamental Sens of all the other Senses, as I shall shew heerafter: so I fear to seem too Curious and Novell heerin to others, and also doubt, lest by putting too much of this new Wine into old bottles I should offend others; having not any Current *Vocabula* whereby to expreſs the very Names of these Principles, nor Authority enough to Coin them; yet I shall generally expreſs my Sentiments of the more Active and Aqueous Principle both of Odor, and Sapor, which I call *Acidum* or Sharp, as also of the Terreous Principle therof, which I shall call *Fatuum* or Vapid; and so leav it to others more particularly to distribute them. And so I conceiv, that accordingly in Chymical Separation the Vaporos Spirits or Effluxes are more Acid, and the *Caput Mortuum* more Fatuous and Stupid; and in Natural Generation and the Proceſs therof, the *Succus* of Fruits, and the like, is first Acid, or more Acerb; and afterward more Sweet, then Strong or Rancid; and at last Vapid: wherein the more Active Quality first prevailing in the Fermentation, doth Actuate some such Acid Humor, which makes the Fruit, or the like, more Acid and Poinant, and then by expenſ of the eagernes therof, by Evaporation, and a more equal Distribution in the Concoction of both Qualitys, it becomes more grateful to the Sens, or Sweet; and as that Temperature begins again to be dissolved, more Rancid; and at last when the Active Quality is wholly emitted in the *Effluvia*, or Conſopited and overcome by the Terreous, Vapid. Thus also the Mouth, which tasteth Meat, hath judged therof,

*Infanti Melimela dato fatuasq; Mariscas,  
At mihi qua novit pungere Chia Sapiſ.*

And therefore generally elder men delight more in such Acid and Poinant Savors; becauſ their Sens of Taſting is more Weak, and as I may so say, Inſipid in itself; and children in Sweetmeats, which are of a more equal Temper, and consequently more ſuitable to their more exact Sensation. There is an old Problem, whether Odors do Nourish? which I suppose may easily be resolved, that they do not, nor cannot Nourish, as Odors; for so Sapor, as Savors, do not Nourish; becauſ they are only Spiritual

ritual Qualities, and no *Materia Nutritiva*; nor can they Migrate out of their Bodys; nor do they so much Nourish in and with their Bodys, as Condite Meats and Drinks, wherein they Inhere; and there are many other Qualities; which are neither so Odorous nor Saporous, and yet more Nutritive and Assimilative. But as Sapor doth most properly commend Meats and Drinks to the Appetite (which greatly conduceth to Nourishment, and so there is sometimes a better Concoction and Nutrition of and by that which is more gratefull to the Taste, though less wholesome in itself, then of that which is more wholesome, and less grateful according to the the Consent and Confederacy of Nature, especially if the Delectation and Aversion be extraordinary, as in Longing or Loathing) so next to Sapor, Odor also, which is very Homogeneous with it, as I have said, doth by a pleasing Fragrancy excite the Appetite; and so, though more remotely, may Musike at a Feast, as *Siracides* observeth; and the Color of Wine when it looketh Red, and sparkleth in the Glass, as *Solomon* observeth: but these are only Sympathetical Exhilarations and Provocations of the Sensitive Imagination and Appetite, (which yet conduce to Vegetative Nutrition, and plainly shew the Subordination therof and Combination between them) and so Physicians generally prescribe Mirth at Meals; as he also adviseth, *Eat thy Bread with Joy, and drink thy Wine with a Merry heart.* But the greater Question is, whether Vapors as Vapors, and particularly, Odorous, may Nourish? and then they are to be considered, either as they may pass into the Brain, and so certainly they may Intoxicate, as some find by Sents of Winecellars, Fumes of Tobacco, and the like; yea, sweet Perfumes, if strong and vehement, may cause Headach; and it hath been credibly reported that some have been Poisoned by Venemous Sents: wherefore it will be very hard to conceive, that the Animal Spirits may not as well be refreshed and cherished by benigne Vapors, as by malignant thus disordered: or as they pass by Introsuction or Inspiration into the Lungs, and so seem to be not only for Refrigeration; but since there is more Inspired continually then Respired, it may deserve farther Inquisition, whether the rest doth not pass out of the Lungs by the Heart into the Arterys, and thereby serve both for Purification and Attenuation of the Blood, and also for Nutrition? for though I conceive Elementary Fire or Air alone not



to be Nutritive, yet I know not why Vapors may not Nourish as well as Drink, since they are only Water Rarefied: and there is not only Air, but also much Vapor in the Atmosphere wherein we breath, and which we continually suck in by such Inspiration: and if that be too pure an Air, and not sufficiently Vaporous, as in the *Andes*; or if the Vapors be more Adulterated by Fire of Charcoal, or the like; or Corrupted by much breathing in a close Room, or the like; we feel great want of a more Nutritive as well as Refrigerative Air: and plainly the Birth or *Fœtus* while it is in the Mothers Womb, and is Nourished by her, hath no Use of the Lungs, nor Inspiration thereby; but as soon as it is brought forth, it needeth this *Breath of Life*, as it is termed, as well as any other Nourishment, and cannot live, as before, without it; though there was before the same Motion and Heat of the Heart, which did need as much Refrigeration as afterward: and though it may seem very strange that Vapor thus passing Immediately from the Lungs by the other passages through the Heart into the Arterys, and not like other Meat and Drink first into the Stomack, should Nourish, without any more Process of Concoction, yet it may be also considered how much sooner Drink in an empty Stomack is Concocted than Meat; and whether Vapor, which is so much more Rare and Fusile than Drink, need any such Process, and may not by the Heat and Motion of the Blood be Concocted and Mist with it; which is all that I intend by this kind of Nutrition; and so I refer it to the Judgment of learned Physicians; who if they shall judge it to be so, will also judge the Atmosphere to be of such consequence as I formerly intimated.

IV. *All the Rivers run into the Sea, yet the Sea is not full. Unto the place from whence the Rivers came, thither they return again*, as the wise Philosopher saith, most truly and Philosophically, according to the Divine History of the Creation of Waters beneath, and Waters above, and the mutual Reciprocation thereof; though perhaps not according to Popular Understanding: for indeed the Popularity, which some weak and shallow Wits impute to Scripture, is rather in their own Apprehensions, than in the Expressions, wherein Scripture is always Consonant, & the Truth thereof Consistent with itself; and so we are to Interpret them accordingly, and to reduce them all to the System of the World, which is Intentionally revealed and declared unto

unto us in this Divine History of the *Genesis* therof: and then we shall neither, as some, place Waters below the Earth, becaus Springs are termed Subterraneous, or above the *Æther*, yea the Superæther, becaus the same word signifieth both Air and Heavens; and so make them to possess both the Center and Circumference of the whole World: nor conceiv that Rivers flow from the Ocean only by Subterraneous passages, and so flow thither again in their Canales: whenas there is not any mention made of Rivers in all the Six Days Works; but only of Waters above and Waters beneath, which were first gathered into Seas: though I doubt not but that Rivers were also made afterward in the Third Day; yet first by Waters above, or Vapors, and in the same Order of Nature wherein they are still continued; that is, by the descent of Vapors first raised from the Seas into the Earth; and therefore only Vapors or Waters above, and Seas or Waters beneath, are heer mentioned: and so afterward we read that *There went up a Mist from the Earth, and watered the whole face of the Ground*, before we read of the fower Rivers that encompassed *Eden* about, and were also fed and continued by it: and the Vapors thus descending into the Spongy Earth, where they meet with Stones, or other such Bodys less apt to Imbibe them, do stand in Drops, as they do on Marble (which Poets call the Tears of *Niobe*) and those Drops gathering together in Fluxes make at first little Rills, and they afterward Rivulets and Rivers, which run again into the Sea, and so the Rivers were made, and are still continued; and this, and no other, is the Course of the Waters, as the Psalmist affirmeth, *They go up by the Mountains, they go down by the Vallys, unto the place which thou hast founded for them*, and so we read of Windows of Heaven, aswell as of Fountains of the Deep, and the Author of *Esdra*s calleth them also, *Springs above the Firmament*: for so indeed they are Mutually and Reciprocally Fountains each to other. And this plainly is proved by the freshness of Rivers, which may not be imputed to any such Percolation through the Earth, whereby it hath formerly been supposed that Salt might be Separated from Water, but is now found to be otherwise: I have tried it by so strict a Percolation, that only a Drop or two of Brine have been Excerned in a whole Days time, and yet they were so Briny, that I could perceiv very little or no difference; and all Saltmen find Evaporation to be the most easy



and natural way of making Salt, which therefore certainly is the way of Nature, in so great an Evaporation, as apparently makes all Rainwater fresh, and consequently all Riverwater. Nor are Salt Springs from the Sea Immediately, or Mediate, but from Salt Mines in the Earth, like other Nitrous, Bituminous, or Iron Springs; and the like; though I also acknowledg, that Salt may be Volatilised, as Chymists say, and which doth very sensibly appear to us who dwell neer to the Sea, where Woods on that side toward the Sea are blasted thereby, and Iron Nails and Window Barrs rotted (as Iron will swell and be corrupted by lying long in Saltwater) yet these Vapors of the Sea go not farr, nor are such Experiments therof found at any great distance; much less can they make Salt Springs in the Inland, where also fresh Springs flow very neer to them: but they are both first from Vapors, and then the Salt Springs are made Salt by runing through Sale Mines. And lastly, I shall approve it by a plain Experiment which I received from a very Credible Person, whose House standing at the bottom of a declive Hill, and wanting Water, he caused a large Trench to be digged down the side therof, and many other less Trenches branching out of it both ways, and then filled them all with Pebble Stones, and again covered them over with the Earth; and found Water to flow at the bottom of the main Trench, through a Pipe laid to receiv it: which is only by Artificial application of the same Natural Causalitys. And when I had reported this to a Noble Lord, he confirmed it with another Observation which himself had made, in certain Quillets or little Quagmires, which have Water springing and standing in them; by causing them to be searched, and the ground to be digged under them, where he found Beds of Stone: (which might also give occasion to the Poets to feign Rivers powring their Waters out of Stony Urns) Nor indeed is it Imaginable that Rivers and Springs should otherwise come from the Sea, whose highest Watermark is farr below the Springs; as is well known to such who live neer to the higher Shores of the Sea: and so also is attested by such who have gone up the Pike of *Teneriff*, wherein they found a Spring farr above the Sea: whereas Water, while it is such, cannot ascend above its Levell; for then it should rise above itself: becaus it is all one Equident and Fluid Body. And Springs rise first out of the Earth in very small Sources, and not from any

any such Subterraneous Rivers, as some have supposed, flowing in great Canales under the Earth, and Impelled by I know not what Subterraneous Vapors, like Bloud in the Veins. But though all Water will run to its Levell, yet if it be not also some way Impelled, it will run very slowly, and so swell and mingle by degrees as it can hardly be perceived to run: wherefore it is observed in such Cutts and Aqueducts, that if about a foot Fall be not allowed for every Mile, there will be a very little Current of the Water, whereas Rivers run very swiftly, and some of them with a very Rapid Current; which must be by a farr greater Fall: and therefore the Springs or Sources of all great Rivers must be farr within Land, and also fall from much higher ground; as the Author of *Esdra* saith, *That the Floods might powr down from the Rocks*. Having thus farr considered the Courf of Waters from the Sea into the Air by Evaporation, and from thence to the Earth, and from the Mountains or higher ground therof to the Seas again, which is the first and great Reciprocation therof, whereby they are such Mutual Fountains each to other, I shall now farther consider that which we commonly call the Floud and Ebb, or Tides of Seas and Rivers, which is also another Mutual Reciprocation of Waters; for so the Floud of the Seas is the Ebb of the Rivers, and the Ebb of the Rivers the Floud of the Seas, not Circularly, as the other, but only describing a very small Segment, or part of an Arch, like a *Pendulum*. Now because so many several *Hypotheses* therof have been offered by others, and scarcely any two agree together, I shall also present my *Hypothesis* among the rest, not going out of my way, nor farr from the Text to produce it; which is this. As I suppose, that Rivers run from the higher parts of the Earth, so also that the Main Ocean into which they run is some lower part of the *Cortex* therof, which is the fittest *Alveus* to receive it; and therefore it is called the Deep: and though I know not how deep the *Fundus* therof is, yet certainly it must be farr deeper then any of the Narrow Seas, which run into it, otherwise they could not so run into it; and the Narrow Seas must also be deeper then the Rivers which run into them: and they not only run one into another, but with such a force and Current as doth plainly declare a proportionable Fall. And while the Rivers so run into the Sea, yet the Sea is not full; and all these Waters certainly do

not:



not sink into the Earth below the *Fundus*, or into any vast *Barathrum* therof, which would long since have been filled, but apparently they Flow and Reflow continually: nor are they Imbibed by the Shores, or Absorbed by Evaporation, which is continually according to that Reciprocation of Waters and Vapors that I before described, and any Inequality therof can make very little or no difference in this case. Also we know that Water Impelling Water by Fall or Force, if it hath no Vent or farther Passage, will caus the Water so Impelled to rise before it; because the Impuls driving it forward, and consequently hindring it from flowing back, when and where it is stop'd, must caus it to rise and swell. Thus the Rivers runing forcibly with such an Impuls into the Narrow Seas, and they into the Ocean, beyond which they do not, nor cannot pass, do certainly caus it to rise and swell toward the Middle by such Motive Impuls and Current of all the Rivers and Narrow Seas on every side therof; and then when it hath so raised the *Pondus* of the Water somewhat above the Levell of the Ocean, and so farr, as it can rais it no higher; when that prevails against the Impuls, and the Water of the Ocean begins to fall again, it will drive all the Water between (being a Voluble and Undulating Body) as fast and as farr back again; because it was Equivalent to the Impuls which so raised it: whereby the Water between the highest Watermark of the Ocean (to which it did so rise and swell, and from which by reason of the greatest *Pondus* therof it began to fall back) and the highest Watermark of the Rivers, to which it can so fall back, reflows into the Narrow Seas and Rivers accordingly: that is, above the Levell in the Rivers, as it before proportionably rose above the Levell of the Ocean: because, as I said, it is a Rowling and Fluctuating Motion, which will ever be Reciprocally higher at each end, like the shorter Vibrations of a *Pendulum*: and it doth not rais it so high as the Springs, from which the Fall of the Rivers first began; because the Fluctuation doth not reach so farr, forward, or backward; and probably so much Water as is beyond the highest Watermark of the Rivers in the Canales therof, and from thence to the Springs, is by Evaporation continually Exhausted from the Sea; which returning to the Earth doth serv continually to supply the Rivers, though more or less, according to the Operation of the *Aether* and Planets,

Planets, especially the Moon, which caus and regulate the Evaporation; but generally so as the Sea is never full, nor the Rivers empty: and by this Constant supply of the Springs and Rivers there is accordingly a Constant Fall of the Waters one way, and an answerable Return therof by the *Pondus* of the Water of the Ocean so raised thereby, as I have shewed, the other way: as if we suppose a *Pendulum* having a Constant and almost equal Impuls added to it one way, and so Impelling it in every Vibration, it will certainly so return by its own *Pondus* and thereby Constantly and Equally Vibrate. And this I conceiv to be the account of Tides generally; though there are many particular Variations therof, both Ordinary, as the Menstruous; and Extraordinary, as Annual, and Casual: and I suppose the Menstruous, and indeed the Diurnal Variation of the Tides therin, to be from the Moon; not that they do follow her Cours, which is from West to East, for so plainly they do not, the Flux and Reflux being from all Shores to the Ocean, and back again: but as I conceiv, that as the Sun raiseth those Dry Vapors or Fumes, wherof I before discoursed, by his vehement Heat; and which caus no such Increase of Waters, as I before mentioned; so the Moon by her more moderate Heat principally raiseth those Moist Vapors, which so return into Waters, and caus the Increase therof: and this Influence of the Moon is sufficiently known in many other Instances, but eminently in Tides, which accordingly observ her two *Apogea*, when she is farthest from the Earth, and her Heat then most moderate; and so the Tides are then highest when she is New in her first *Apogaeum*, and Full in her Second, every Month, and so proportionably every Day between them. Thus I have briefly delivered my Conception of this great *Arcanum*; which I shall leav to be farther examined by others, especially the most expert Navigators; and desire them to try it by these *Criteria*: Whether the Tides do not Impell the Main Ocean from both the opposite Shores at the same time? as most probably they should; becaus the Impuls of the Rivers and Narrow Seas will not last so farr, and so long, as to drive the Water from one Shore to another cross the whole Ocean, nor perhaps very farr into it; but rather by driving it from both the advers Shores at the same time they make the Ocean to rise and swell a litle toward the midle; as if several men with Brooms, or the like, at the two ends of some long Chanell,



should sweep the Water therein forward both ways, following close after one another, it will thereby be Impelled, rising and swelling toward the middle; and when they cease, by its own Weight, fall and return both ways back again. Again whether Tides be not less, and less, toward the middle of the Ocean, and about the middle, perhaps Imperceptible, from which the Rivers and Narrow Seas Impelling it are farthest, and so their Impulse more, and more, abated; and the Water driven before them still rising and swelling, the Weight thereof is increased; which at length makes the Return thereof back again into the Narrow Seas and Rivers? Also whether there be any Perceptible Tide in Narrow Seas and Rivers between such Tracts of Land which are most longinuous and farthest from the Ocean? or whether they are not proportionably less, and less, as they are farther from it in any Parallel of the Earth? because the *Pondus* of the Water rising and swelling therein, as I have shewed, and thereby returning the Waters back again, doth abate by degrees, and may not reach so far as such longinuous Seas and Rivers. Lastly, I desire it may once be ascertained by them, whether indeed there be any such Circumterranean Tide, or Course of the Main Ocean from East to West, as is commonly supposed? which certainly is contrary to the Course of the Moon, nor do I find any ground or reason in my *Hypothesis*, that might induce me to affirm it; nor can the supposed Motion of the Earth solve all the Tides every way. And this Circumterranean Sea is the Main Ocean that I intend, and which, as I conceive, is chiefly intended by the Congregation and gathering together of Waters, mentioned in the Creation thereof, to and from which the Rivers thus flow and reflow, and though it cannot return to cover the Earth, as it did in the first *Chaos*, or since in the Deluge, yet as a *Fascia* it still environeth it round about, and is the great Province of Elementary Water. Extraordinary Tides are not so considerable, being Varicous and Casual; and as they proceed from no such constant and certain Causes, so they have no such certain and constant Courses. The Annual Tides are observed by us in our Southern Coast to be generally greater about *November*, and *February*; and accordingly we observe that about *November*, when the Heat of the Summer is past, and the Earth is filled first with Water, the Springs begin to rise, as we say, in Fountains, Wells, and Ponds,

Ponds, and apparently are seen to peeze, as we term it, out of the Banks into Ditches, and to run more freely in Rivers; and so again about *February*, (which is commonly said to fill the Dike) after the Earth hath been bound with Frosts, and is fully thawed, and the Waters begin to run more freely, whereby they caus such an Impuls therof; which proceeds from such more general *Confluvia*, and sudden Fluxes; and so sudden Inundations may caus some Temporary Tides in some places, but the Universal Deluge was Immediately by the Divine Power, and Providence, as Gbd saith therof, *Behold I, even I, do bring a Flood of Waters upon the Earth*: which whether it were by produciug all the Moisture in the Pores of the Spongy Earth (which certainly if it were all gathered together would make another great Sea) and making it Miraculously to flow upon the Surface of the Earth instead of being imbibed by it, as it is now a constant Fountain to supply the Rivers, and Seas Naturaly, (and so may be conceived to be these Fountains of the great Deep which were broken up) and by resolving all the Vapors and Fumes in the Air into Cataracts of Rain, and so also opening those Windows or Floudgates of Heaven, or otherwise, I will not presume to determin; becaus it was Miraculous, and Preternatural. But there are some litle Tides and *Euripi*, so very strange and wonderful, as have puzzled the greatest Philosophers, and I know no Colorable reason or account, which any have ever yet given therof; nor am I such an *Oedipus*, as to unfold these Riddles of Nature, which though they seem to be her Ludicrous Disports and Galliards, yet certainly are according to some Harmonious Measures, of answerable Causalities; though we may not hearthem or do not hearken to them. Concerning which I shall only relate an Experiment, of which I must freely say, — *Non inventa reperta est*: for I confess I received it from another, who declared to me the Matter of Fact that he had done it, but was not pleased to revele the Secret how it was done, which yet after I had found out he acknowledged unto me to be the same. The Invention was to make a Waterdial, wherein the Water should rise and fall every twelv hours, in this maner. Let there be a Font or Basin of the Dial made with a Hole at the bottom, and let there be a Pipe open at each end, wherof one end must be applied to a Subterraneous Spring, or the like Flux of Water, and the other end closed to



the Hole in the bottom of the Basin, so as the Water may descend from the Spring (being as high as the top of the Basin) to the Hole in the bottom, and through it reascend in the Basin in twelve Hours: and as it so ascends by degrees every hour describe Lines in that side within the Basin: And at the twelfth and last Line make another Hole in the other side of the Basin, and let a *Siphon* be inserted toward the top of the Basin, and closed to it, so as the Water in the Basin may fill the shorter Leg thereof hanging down to the very bottom of the Basin, and just turnover at the *Vertex* of the *Siphon*: and the Cavity of this *Siphon* must be doubly as capacious as the Cavity of the former Pipe, so as to convey away doubly as much Water in the same time by the longer Leg thereof out of the Basin, as ran into it through the Pipe; whereby though it continue still to run through the Pipe from the Spring, yet the Cavity of the Pipe being only half so capacious as the Cavity of the *Siphon*, it can run in only half so fast by the Pipe as it runs out by the *Siphon*; which will be sett on runing by the Water ascending into the shorter Leg thereof within the Basin, when it rises to the Line of the twelfth hour, and there turns over at the *Vertex* into the longer Leg without the Basin, and that will carry it away doubly as fast, untill the *Siphon* be emptied; and consequently caus the Water to descend in other like twelve hours: which must also be noted by Lines described on the other side of the Basin: and when the *Siphon* is empty it will cease runing; and then the Water runing through the Pipe only will ascend into the Basin in other twelve hours, as before, and so continually. But because it is somewhat Curious and difficult exactly to make the Cavity of the *Siphon* doubly as capacious as the Cavity of the Pipe, a Stopcock may be inserted into one, or both of them, whereby the just proportion of Water in them may be accordingly regulated. Now, though I can neither affirm, nor do I know, that there are any such Fonts, Urns, or Caverns, in the Earth, so disposed as in this Experiment, whereby the *Enripi* are caused, yet I know that it may possibly be so; and if not, yet I am assured that both this and any other Regularitys in Elementary Nature, wherein there is neither *Plastes*, nor Artist, must be by some answerable Causalits; which I leave to others more particularly to Investigate.

V. The Earth which is last and lowest of all the Elements hath a most Dens Body of Matter, though the least Active Spirit; and so every Element hath a less Dens or Gross Body of Matter accordingly as the Spirit therof is more Active; and Vegetative Spirits are less Immerfed in the Matter then Elementary, and only by the Mediation of them; and Sensitive less then Vegetative, and only by the Mediation of them, and Elementary; and Intellectual, which we therefore call Immaterial, not at all, as I shall shew heerafter. Now as Æther is the most Rare of all the Elements, and so as I suppose the Body therof cannot be made more Rare by any other Elementary Spirit, becaus there is none other that is more Active, and which may more Rarefy it; so Earth is most Dens, and as I suppose the Body therof cannot be made more Dens by any other Elementary Spirit, becaus there is none other less Active which may more Condensate it then it doth itself: for as these Elementary Spirits do require more or less Rare or Dens Bodys, so they do Naturally and most Effectually caus them; and thus the most Rare Æther, which is Utmost, and the most Dens Earth, which is Inmost, do contein and bound the two other more Variable Elements, Air, and Water, between them, as I have shewed. The Rarity of Æther is altogether unknown to us; but if it be, as I suppose it, more Rare then the most Rarefied or Expanded Air, and the very common Air be a thousand times more Rare then Water, and that fourteen times more Rare then Mercury, and the Elementary Earth (wherof we know not the utmost Density, as we know not the Rarity of Æther) yet more dens then it or Gold, (which is said to be nineteen times heavier then Water) or any other Cortical Earths whatsoever, then certainly there is a vast Disproportion of Density and Rarity between the Bodys of Æther and Earth: and yet though Earth be most Dens, Æther is not most Rare, nor do we know, or can assigne how much more Rare Superæther may be then it; which will Multiply the Disproportion exceedingly more, wherof though we can give no just account; yet heerby we plainly perceiv how strangely Matter may be Densified, or Rarefied; and consequently what vast or Innumerable Pores, or Spaces, they must assigne, who will still contend that Rarity is only from Porosity, or Vacuity. As in Water, so also in Earth, there are two distinct



Regions, not only Mathematically such, as some have made, both in *Æther*, and Air, where they are not; but Physically such; and yet they have not found them out where they are: for as there are Waters above, and beneath, so there is manifestly both a *Cortex* of the Earth, wherein there are not only many other *Composita*, and many sorts of Earths, Metalls, Minerals, Stones, Chalk, Clay, Marl, Loam, Sand, and several others, which thereby discover and declare it not to be the very Elementary Earth, but also Water flowing in the Canales therof and imbibed by all this Spongy *Cortex*, whence it is denominated *Terraqueous*, and is almost as much Elementary Water, as Earth: nor is any part thereof in itself so purely Elementary Earth, as the Ocean is Elementary Water; wherefore there is most probably another Elementary and Subcortical Earth, (or as it is said, *Foundations of the Earth*) which though we know not where it begins, and the *Cortex* ends, yet I presume it to be below any the lowest *Fundus* of the Water, or descent of Rain or Dew; otherwise it should not be the Elementary Earth, which seems to be intimated by that expression of the Psalmist, *Then the Chavells of Waters were seen, the Foundations of the World were discovered*. Nor may we reasonably conceiv that there are below the *Cortex* any such hid Treasures of Metalls, Minerals, or the like, as there are in it; since they can never be searched or digged out by any Industry of Men or Beasts, whereas God and Nature made nothing in vain. But that which doth most confirm me in this Opinion, is the most Ingenious Invention of the Inclinary or Dipping Needle, as they call it; for most evidently that varies its Position respectively, as it is neerer to, or farther from, either of the Poles of the Earth, and not according to the Poles of the World: which very sensibly discovers that there is such a Subcortical Earth; and also that it is Magnetical: for though there be Rocks of Magnets in the *Cortex*, yet this Inclinary Needle, as I shall call it, doth not so Incline unto them, but generally to the Poles of the Earth, as to one great Magnet, and exactly so as a Needle carried about a round Magnet or *Terrella* doth Incline itself in all the Points of the Circumference, as I shall shew heerafter: and this also shews that the Elementary and Magnetike Earth is Globular, as well as the *Terrella*; otherwise any Eminences therein would vary the Inclination, as well as in the *Terrella*. Yet I do not conceive that this Elementary Body of the Subcortical Earth, which I call

call Magnetical, is of the same kind with any Cortical Magnets; as they are not of the same kind with Iron Stone, or Mine, though both have a Magnetike Quality: but rather that it is far more Dens then them, as I have said, as it is also far more Consistent then Gold. Nor is it vain or useles (as other Terreous *Composita* below the *Cortex* should be) but very proper and requisite in every respect: for as by the most solid Consistence therof it becomes the Foundation, and *Basis* of the *Cortex* (as they are therefore termed *Strong Foundations* and *Pillars of the Earth*) and indeed of all the Superior Spheres, and of the whole Body of the Universal Globe; so by its Magnetical Polarity it doth continue its own Body in one Immovable Position, as I shall shew heerafter: and most probably it hath no Pores whereby it may be penetrated, convelled, or commiauted by any others, or one part therof severed from another; and so many Bodys in the *Cortex*, Marble, Glass, Gemms are Imporous, as I have shewed, much more this most Dens, Compact, and Adamantine Body of the Elementary Earth. And though some Planets and the Starrs may be greater Orbs then it; yet they are not such Foundations and Pillars of the World, nor is there any other such Central Orb relating to the Circumferential Orb, or whole Globe of the World, besides the Earth; which therefore also is called *Orbis*, and the World, whereof it is an *Epitome*; and all the Superior parts of the Globe of the World are only Concave Spheres. Thus though Earth be most Base and Brute of all the Elements, yet it hath also its proper Excellency and Glory, having the greatest Bodily perfection of the Density of the Matter, to which it doth most approximate; and the Spirit therof hath the greatest Stability and Fixative Strength, though the least Activity: and as I have observed, it hath also such Qualitys in itself, whereby in Miftion it doth Fix almost all the more Agile Qualitys of the other Elements: and the *Cortex* therof hath the greatest Miftion with them all, and the greatest Variety of *Composita*, being the Native Country and Region of all Vegetatives, and of Beasts, the best of Sensitives; yea the Manor hous and Demesnes of Man, as it is said, *The Earth hath he given to the children of Men*: and becaus this whole Spectable World, which *Moses* describeth, was made for him, and all the other Elements are as it were his Roialties, there-



therefore they all point to the Earth, as the Circumference doth to the Center, and are Inservient to it, as that is to Man.

VI. The First or Principal Quality of Earth is Drines, as I have shewed, which is contrary to Moisture, as Cold is to Heat. But as the Earth is the most Brute and Dull Element, so are also the Qualitys thereof like unto itself; and it is heerin most Analogous to the Passive Matter, though it be in itself a Spiritual Substance Generically different from Matter, as well as any others: for there are such Analogys in Nature, not only between Spirits, but also between them and Matter, as they are all Entitys, and Substantial parts of the Univerf, though several Classically Nature differ Classically, and Specifically Specifically, and Individually; and these Differences are their proper Bonitys, whereby they excell all others, though otherwise generally Superior to them, as Matter is better Matter then any Spirit, and so Earth is better Earth then Æther; though the Spirit of Æther otherwise be Superior to the Spirit of Air, and of Air to Water, and of Water to Earth, according to the Order of the Elements which God hath declared, in the Creation thereof. And accordingly the Spiritual Qualitys of Æther are more Active and Powerfull then of Air, and of Air then of Water, and of Water then of Earth: Yet; as I said, Drines is an Active Quality, and Actively contrary to Moisture, and not any less Degree thereof, and much less only a Privation of Moisture; and though Moisture doth more notably Operate in and upon it, as Heat doth upon Cold; and if it be weakned by Comminution into Dust, or Ashes, and the like, it seems not much to Resist, but rather to Imbibe Moisture, and almost to be Receptive of it; as Matter is of Spirits; yet there is some Mutual Operation, as well as Active Contrariety between them; and so Earth itself is called Dry Land, and contradistinguished from Water in the Terrequeous Globe of them both: and it is known accordingly to Operate by Drines, both to Physicians in their Desiccating *Emplastra*, and to Mechanikes in their Cementations; and that Desiccation is not only by Evaporation or Exclusion of the Moisture, but also by Miftion of both, and Predomination, and Prevalence of the Drines over Moisture; for so in the utmost Adustion of Ashes,

Ashes, or any *Terra damnata*, there is Water, and consequently Moisture in the Mixture thereof, which yet is not Actual, but reduced to Potentiality by Driness: and apparently in Congelation of Ice, Grew, Metalls, and the like, there is Water, and so Moisture Potentialy, which is again Actuated by Fusion, but is not Actual before they be melted. And, as I said, Moisture, and so Drines, are Indifferent between the other two Qualitys, Heat, and Cold, and they between Moisture, and Drines, and they are no Secondary Qualitys each of other, but Operate only by themselves Univocally and Efficiently; for as Heat only doth heat, and Cold cool, and Moisture moisten, so Drines, and no other Quality but that, doth properly dry; though Equivocally or Instrumentally either Heat, or Cold, may dry, as I have shewed. And as I have observed of Heat, that being the most Active and Predominant of all the Elementary Qualitys, it hath also the most Confinements, Imprisonments, and Restraints, and several ways of Reducing it into Potentiality, as I have formerly shewed, farr more then Cold, which thereby hath such advantage against it; so hath Drines against Moisture by the very Cession thereof; for though Drines cannot easily Profligate it, yet is it Naturally so very Fugitive of itself, that it is still Flying away; whereas Drines is more Fixed, and much assisted therein by its own Connatural Quality of Consistence; so that there is not any Body Dry, which is not Consistent, nor Moist that is not Fluid: and yet Consistence is a several and distinct Quality, both from Moisture, and Drines; because they are Actively contrary one unto another; but neither of them to Consistence, nor Consistence to them.

VII. As Drines and Consistence are not one and the same Quality of Earth; besides which there are also many other Qualitys thereof, as Magnetike Virtue, and the like; and so Heat, and Light, of Aether, besides many other Qualitys thereof, as Planetary Virtue, and the like; so likewise are there several Qualitys of Air besides Cold, and of Water besides Moisture, which though unknown to us what they are particularly, yet do generally appear in the many various Mixtions of all the Elementary Bodys; and that want of a more particular knowledge thereof is a chief cause and reason why we know so little of Elementary Mixtions: wherefore I



have begun to pry into them, and advanced some few steps toward them, to shew the way to others; and though I may by some be judged to be too Curious heerin, yet I am confident that there are such other Qualitys of every Element, besides those which are commonly called First, and that I have sufficiently made it to appear that they are such as do not, like Second Qualitys, subsist Immediately in the First, and Mediatly by them in the Substantial Spirit, but every one of them Immediately therein, as well as another: and so I conceive Consistence or Firmnes and Drines only to be Connatural Qualitys of the same Element of Earth, and that Consistence doth Immediately Subsist in the Elementary Spirit therof, and not in Drines; as Fluidity is not from the other Qualitys, but rather from the Matter, for so indeed all the other Elements are Fluid; and Consistence is a proper and more particular Property of Earth alone; which hath no Contrary, as Drines hath, nor doth contrarily oppose any one Quality of the other Elements; but only is that whereby the Elementary Spirit of Earth doth render its own Body Firm and Solid, so as no other Elementary Spirit, not having any such Quality, can Confirm or Consolidate its own Body, which therefore remains Fluid and Weak, as the Matter itself. And this Terrene Consistence as it is not only Drines, nor any Second Quality therof; so much less is it Density (for so Mercury is Dens but not Consistent) though that also be assistant to it, as well as Drines; for Density, as I have shewed, is not any Active or Spiritual Quality, but only an Affection of Matter itself, superinduced or varied by the Densefaction of Spirits, and Spiritual Qualitys; as Figure, which is plainly an Affection of the Matter, is superinduced and varied by the Spiritual Qualitys: and therefore Density and Consistence are as different, as Matter and Spirits, wherein they do respectively Subsist: and as I have thus distinguished Consistence from other Qualitys or Affections of the Spirit and Matter of Earth, that thereby we may more discern it, so I shall now shew that it is a Spiritual Quality, and particularly what it is; becaus I do not find it to be sufficiently explained by others; and becaus indeed it is a very Noble Quality of Earth, and of great Mechanical Use: for it is not only a Compaction and Consolidation of all the parts of the Earthy Body, but, as it is also termed, a Firmnes or Stability of the whole Body therof, both which

which I comprehend under the name of Consistence; whereby I also intend that Strength and Rigor of the Consistent Body, which though it be no such Vigor or Force whereby it can Move other Bodys, like the Angelical Powers, nor its own Body, as Material Spirits, nor yet like the Motion of Matter to Union or Station, (whereby indeed Matter Moves itself, but without any Activity or Strength, only by a Recumbence or Succumbence, as I have shewed) and so Fluidity is only an Inconsistence therof, or Falling every way, without any Consistent Strength, or Stability holding it together; whereby it doth plainly appear that such Motion of the Matter, as well as of Fluid Bodys, is not from any Spiritual Activity or Vigor, but contrarily from Infirmitie and Weaknes of the Bodys themselves: yet Consistence doth Spiritually and Actively Unite and Contain all the parts therof, and also Arrest and Fortify the whole Body, having a proper Center therein, as all Spirits and Spiritual Qualities have, without any respect to the Center of Matter; which, as I have shewed, is the Universal Center of the whole Body of the World: and so a Timberlogg floating upon Water, or suspended in the Air farr enough from that Universal Center, yet hath in itself a Center of its own Consistence, where it is strongest, and is most hardly Bent or Broken, and from which it proportionably extendeth that Strength or Rigor through all the parts therof unto the Extremitys, and so this Consistence therof is Mechanically useful to make it a Boat, or Beam of a Balance, which though it be suspended in the more Rare Air only at the Center, yet by this Strength and Rigor all the other parts therof being so Consistent in the whole (though otherwise hanging freely in the same Air) are Arrested and upheld from falling or bending downward, as otherwise they would; and though the parts therof weigh most toward the Extremitys, becaus Gravity is an Affection of the Matter, and therefore weighs most downward in the Extremitys, which are farthest from the Center of the Consistent Strength, which is a Spiritual Quality; yet that is strongest in the Center, which is most opposite, and farthest distant from the Extremitys; and plainly shews that Consistence is not Density, nor Gravity, which Subsisteth in Density, and that any bowing downward in the Extremitys is rather from the Fluidity of the Matter, whereby all the parts of that Wooden Balance would flow downward, like

M m 2 Water,



Water, if they were not support'd by Terrene Consistence. Nor doth Matter Move from, but toward the Center; whereas Consistence, as all other Spiritual Qualities, issueth forth from the Center to the Extremitys, though it be stronger in the Center then in the Extremitys; which Matter is not, as it is Matter; for it is not more Heavy, nor doth it Move more strongly, or rather swiftly as it is neerer to the Center, by reason of the Center; but by reason of the longinquity of the Motion; which would be the same, whether the Body Move in such a Space, and through the same *Medium*, farther from, or neerer to the Center; and so the Weight of a Clock doth not Weigh more, or Move faster when it is almost down, then at first. Also Consistence, which is a firm Union of all the Parts in the Whole, may be such to the Parts in their Private Whole, as Station of Matter is to itself in the Publike Whole therof: for so it keepeth the Parts of any Fluid Body within a Consistent Vessel in Rest, as I have formerly shewed; becaus the Consistence is a Fulciment, which is *quasi* a Center unto them, and wherupon they rest as well as in the Natural Station of a more Rare above any more Dens Body, or as they would if they were Immediately next to the Center. Again, Consistence, which is a Spiritual and Active Quality only for the Fixation of its own Body, hath, as I said, no Contrary; being heerin like to Magnetical Virtue, which is for the Polar Position of the Body: for Fluidity, as I said, is only an Inconsistence and Infirmitie of the Matter, which is not a Contrary, but a Negation of Consistence: and though there be an Universal Union and Coherence of the Matter to and with itself in the Whole, yet there is also such a Mobility of the Parts therof within that Whole, that they will easily be removed, and flow any way, unles they be made to Consist by this Spiritual Quality of Earth; and no other Elementary Body doth Consist by any other Quality of the Spirit therof, but only by this Spiritual Quality of the Earth that is in the Mistion therof: and accordingly Water, which hath more of Earth in the Mistion therof, doth Consist more then Air, and Air then Ether, as I have shewed: and so Terrene Bodys do more Consist as they are less Mist with the other Elements. Nor is the Incoherence of many Terreous Corpuscles, Fluidity, though it seem to be Complexively such; for every Corpuscle therof Simply is Consistent in itself, (as I have before observed of Porosity) and so though there be many Sands in an heap, yet every

one of them in itself is as Consistent as a Sandstone, and Dusts of Steel, or Brass, as the Steel or Brass itself: and though by Commotion thereof there may be a Motion every way like the Motion of Fluid Bodys, yet that is not from the Consistent Corpuscles, or any of them in themselves, but from the Interspersed Fluidity of Air; as if there be Innumerable Terreous Motes in Water, unless they be Mist and made into a Past, the Water in itself is not thereby made more Consistent. But Bodys which have a Consistence in themselves, and have also other Fluid Bodys Interspersed, are made more to Consist in and with themselves, by exclusion of the Fluid Bodys out of their Pores; as a Cable being stretched very stiffly will be made to Consist almost as much as Wood, and so is used by *Funnambuli*; for by stretching the Air is excluded, and the Pores are drawn together and Contracted: and a Wett Cable will be far more stiff of itself, and not so easily stretched as a Dry; because, as I said, Water hath more Consistence then Air, and is not so easily excluded or squeezed out of the Pores; also it is more Imbibed, and thereby more Mist with the Terreous Body of the Cable, then Air, and therefore not so easily Extruded. But heer I must observ, that as it is a general Rule and Canon of Nature, that in all Spiritual Powers and Operations Union doth fortify, so it is most sensibly evident in Consistence; which though it be the same in every Corpuscle, as in any equal Part of a greater Body of the same nature (as it is in a Pindust as well as in such a small Part of the greater Body of Brass from which the Dust was decided, as I before shewed) yet all the Parts of the greater Body being united together do proportionably more fortify themselves, and the whole Body is thereby made more strong in every equal Part thereof, then the Corpuscle decided from it: and it were more then a Curiosity, and of great Mechanical Use, to find out the Increment of the Strength of Consistence according to the Majoration of Consistent Bodys: for certainly the Total of the Strength of the greater will be found to be more then the Addition of so many Units, as there are Parts in it equal to the Corpuscle decided from it. As a Barr of Wood one Inch square will bear about eight times so much Weight, as if it be equally divided into fower quarters, any one of those fower quarters will bear; though that hath a fourth part of the whole Magnitude of the other: whereby it appears that the Increment



of the Consistent Strength therof is about doubly as much as the proportion of the Magnitude; though I do not conceiv that it alway so doubles, but that where the disproportion is greater of the Magnitude, it will be greater also of the Increment, and where less, less. As suppose the Barr of Wood an Inch Square and a yard long, and being equally supported by Fulciments at the Extremitys to bear two hundred pounds Weight hanging at the Center therof, and a Barr of a fourth part of the Magnitude therof to bear a quarter of one hundred pounds Weight, so that the greater Barr bears eight times as much as the less Barr, which yet hath a fourth part of the Magnitude therof; then also suppose another Barr two Inches square, which hath fower times the Magnitude of the Barr an Inch Square, the Increment of the Strength therof must proportionably be doubled in respect of that, as the Increment of the Strength of that was in respect of the other, and consequently, if the Barr of an Inch square did bear two hundred, as I supposed, the Barr two Inches square must be supposed to bear sixteen hundred pounds Weight; that is, fower two hundreds doubled, as the Barr an Inch square did bear two hundred; that is, fower quarters of one hundred doubled: now the proportions of Magnitudes between these three Barrs are, as I said, of the least to the midst as one to fower, and to the greatest as one to sixteen; and the Increment of the midst in respect of the least is as eight to one, which is doubly fower; and of the greatest in respect of the least, as sixty fower to one, which is fower times sixteen. Also it may be tried in Barrs of other Figures; as of round Barrs of an Inch Diameter, and Triangular Barrs of an Inch Perpendicular, and any other Regular, or Irregular Polygons: as a Barr half square and half flatt, or an Inch one way, and half an Inch the other way, and how much it will bear one way, and how much the other way, and the like: and I shall propound it to be examined by Mathematicians and Mechanikes, whether in all cases the Increment of the Strength of the greater Consistent Bodys be not proportionably according to the Increment of the *Superficies* of the less Bodys? as the midle Barr being an Inch Square, the fower Lateral *Superficies* therof made only fower Inches; whereas every one of the fower least Barrs being half an Inch square, the fower Lateral *Superficies* therof made two Inches; and so of all the fower least Barrs, whose whole Magni-

Magnitude is equal to the middle Barr of an Inch square, eight Inches; whereas the fower Lateral *Superficies* of the middle Barr made only fower Inches, as I said, and so of the other; wherein the Decrement of the *Superficies* therof is double, and also the Increment of the Strength of the Consistence therof double: Now though there be, as I have shewed, an Increment of the Velocity of Motion, and accordingly of the Gravitation or Descend, and Percussion of a Scale or other Body, by the *Pondus* of the Matter (whereby the Increment of Velocity may be tried) yet that is by several Degrees Successively Actuated, whereas the Increment of Consistent Strength is present and Simultaneous. And heerin may plainly appear another difference between Matter and the Affections therof, and Spirits and their Spiritual Qualities: for though Matter by Union doth fortify and defend itself in the Whole against any Nonentity, as I have said; because the Extension therof, being Quantity Consistent (which is the only Consistence of Matter) must Consist together through the whole Quantity of the Universal Body therof, as the Extension of any Particular Body must Consist and be Continued through all the Parts therof; otherwise it should not be the same Extension as it is: and therefore though one Part may be removed from one Place in the whole Body of the World to another, yet another Part must necessarily succeed, to Continue the whole Extension therof, and thereby to render the same whole Body Complete and Intire, and the whole Extension therof Consistent: yet the Union of Part to Part, though never so many, doth not make any Increment of the whole Extension above the Total of all the Proportions of all the Parts; and so an hundred several Weights of one pound of Lead, being melted or otherwise united together, will not weigh in all more then one hundred pounds; or if the same Matter in a greater Extension be Condensated into a less Extension, it weighs only according to the Mass of the whole Matter, and not according to the Extension; and therefore is the same, whether the Extension be greater, or less; though as it is so much Matter in a less Extension, it will penetrate and sink through an equal portion of Matter in a greater Extension, as I have shewed: but yet doth not by such Condensation acquire any greater Gravity in itself, then proportionable to the whole Body of the Matter; as we say, that a pound of Feathers.



Feathers is as heavy as a pound of Lead; though the Lead will press down the Feathers, and not the Feathers the Lead, in respect to one another and their due Station and Position in the Universal Body of Matter, as I have declared: whereas this Terreous Consistence being a Spiritual Quality gaineth an Increment of Strength in itself by such Physical Union above the proportions of all the Parts United or added together Arithmetically; and so Fire of so many equal Parts United together Physically into one Body will heat and burn more then so many several Sparks equal to those Parts, as being United or added together Arithmetically will amount to an equal Total. Also a Wire of Iron may be made so small and so long as that it will not bear its own weight at the Extremitys, and Glass so Capillar, as may be wound about the finger, though Glass be very fragile. And though I conceive Hardnes and Softnes to be only different Sensibilitys of Consistence or the degrees therof, as more Consistent doth more resist the Touch, and less less; yet Fragility and Ductility are different kinds of Consistence itself: for Consistence hath both a Strength and Rigor of the whole Body, which Fragility also hath, and Ductility hath not; and likewise a Spiritual Cohesion and Tenacity of all the parts therof, which Ductility hath, and Fragility hath not so perfectly as proper Consistence: and therefore Fragile Bodys, as Glass, are easily Broken, but will not so easily Bend; and Ductile Bodys, as Wax, will easily Bend, but are not so easily Broken: nor indeed do I conceive any Body to be properly Consistent, and such as will neither Break nor Bend, except only the Subcortical Earth, which is Elementary, and hath the proper Qualitys therof in their greatest Actuality; as Aether hath Heat, and Light: whereas other Cortical Bodys, though most Rigid, as Iron, and the like, may be Broken, or Bent; yea by Fusion become Ductile and Fluid: so that Ductility is partly from Moisture; and is only an imperfect Consistence, which though it be not the same with Drines, is very much assisted by it, as I have shewed. Also Fragile Bodys of less Crassitude may Bend more, as I said before of very slender Glass; becaus there is less Distortion, that is, less Expansion in the outward Convexity, and Compression in the inward Concavity of the Arch, or Angle, that it makes in Bending: and the very Bending before it Breaks shews that there is some Ductility in it, which is an Imperfection

of Consistence: and this doth plainly appear in Glafs heated, which is farr more Ductile, and molten, which is Fusile: whence also it hath that other Imperfection therof, that is, Fragility, which it betrays when it is cooled: but I conceiv that Fragility is a less Imperfection of Consistence then Ductility; becaus that appears in Actual Drines, and this in Actual Moisture. And Fragile Bodys, though somewhat Flexile, yet, if they be not over-bent, will return again very smartly to their Position, which we call Springines, and will not stand bent, as we say, as Ductile, unless the Rigor (which is properly every way, as it were, by so many *Radii* from the Center to the Circumference) be overcome by long continuance. And this Springines is only a Return to the Position of the Consistent Body; (and not as Elastical *Potentia*, which is to the Density or Rarity of more Fluid Bodys) according to that Natural Rigor, or Temper of Bodys, which the Spirits require, and caus to be in them, and from which they are Violently diverted, and therefore so suddenly and forcibly return unto it again, if the Violence do not continue so long as to caus the very Spirit to conform unto that Figure, as I have shewed, though it will hardly conform to that Temper, in Elastical Bodys: as also Vegetative and Sensitive Spirits will hardly conform to Inorganical Figures. Now Consistence being not a Compound, but Simple Quality of Earth, therefore it doth contein Earthy Bodys together, if they be Continuous, though very various and different *Composita*; for so it contains both the Subcortical, and Cortical Earth, and all the Rocks, Mountains, and Eminences therof, as one *Compages*: and so Brick, and Mortar when it is dried, do not only Adhere, as Water and Glafs, but Cohere and Consist together; becaus though they be several *Composita* or *Mista* of all the Elements, yet their Consistence is common to them all, as they are Earthy Bodys: as Matter doth therefore so Unite itself in all the Bodys of various *Composita* in the World: I have seen an old Brick Chimny undermined and pulled down to fall like a Pillar of Timber without any Breaking; which consequently had one Center of Consistence, that did contein all the Earthy parts therof together, as a Needle hath, which is half Silver and half Steel; and as the whole Body of Mater hath one Center, to which it all tendeth, though varied into the several Bodys of Innumerable *Composita*.



VIII. As Siccity and Consistence are not one and the same Quality of Earth, so much less Consistence and Magnetical Virtue, though that require a Consistence, as Consistence doth Siccity: but, as I have said, Consistence doth only Contain and Arrest the Parts in the whole Body generally and indifferently every way; whereas Magnetical Virtue doth Direct it particularly in one Relative Place or Position, (which we call Polar) unto North and South; whereby the Difference between Positive Extension in its own *Ubi* and Relative Place may plainly appear: for a Magnet is in its own *Ubi* as any other Body, but besides it hath such a Relative Position, which is Polar, whereby the Polar Points thereof, North, and South, are so Directed as that they will not be placed otherwise, and so thereby consequently all the other Points and Parts thereof in the Whole, though the Whole be only in its own *Ubi*, as any other Body. Also Consistence is without any Motion, for it is the same whether the Body Move, or not; but Magnetical Virtue hath a Verticity to reduce it to its Polar Position. Again Consistence is Orbicular, as the Strength of a Wooden Wheel is equal at the Extremity of every *Radius*, being equidistant from the Center; but Magnetical Virtue is much stronger at the Poles than at the Extremitys of the *Aequator*, as I shall shew hereafter; and indeed otherwise it should not be so Polar, or North, and South, more than East, and West. Also Consistence hath no Emanation like Magnetical Virtue; and there are many such other Differences. But yet, as I said, Consistence is an Auxiliary Quality thereof, being both Connatural Qualities of the same Element. And so the Elementary Earth probably is most Consistent, and most Magaetical: and the Magnet-Stone is also very Consistent, and so is Iron Mine, and especially Iron, and Steel, which are the Extractions thereof: and I know not whether there might not be some such Extraction of the Magnet Stone more Magnetical than the Stone or Mine thereof: but certainly the Elementary Earth is far more Magnetical than any other Magnet, because it is Elementary; and also because it is so vastly great, whereby there is a proportionable Increment of the Virtue: and this is proved by the very strong Emanations thereof which penetrate the whole *Cortex* of the Earth; as appears by the Inclinatorial Needle; for Magnetical Virtue, like Consistence, hath no Contrary; because

it is only for Direction and Position of its own Body : though Density, as well as Longinquity, may hinder, or abate it, as they do any other Spiritual Powers whatsoever, but not repell, and reflect it. Also the Magnetike Earth by the Emanations thereof doth Excite and Actuate the Potential Polarity which is in some Cortical Bodys; as Iron Barrs, which have stood long in a Polar Position, or Iron, and as some say Brick-earth, heated and laid to cool North and South; which is not by any communication of the Magnetical Virtue of the Earth, (for no Accident can so Migrate out of its own Substance, wherein it doth Subsist, into another) but, according to the Doctrine of Potentiality, which I have formerly delivered, by Univocal Generation or Production of the Magnetical Virtue Potentialy being and Subsisting in those less and weaker Magnets into their Actuality. Also if the Virtue of them or the Magnet Stone be Actual, and they laid in a Position not Polar, as suppose East and West, yet if they ly so long, the Magnetike Virtue of the Earth will Predominate, and vary that Polarity to its own North and South, which is very observable; and as it sheweth that the Earth is the great Magnet, which in time can so over-rule all these less Magnets; so also that these less Magnets, or *Terrella*, are such Individually in themselves, becaus while they are laid in that Position East and West, which is not Polar, yet they retein their own Individual Polarity, in such a Position as is opposit to the Polarity of the Earth; and though the Earth will at last over-rule them, or if they were freely suspended in the Air they would Naturally conform themselves to the Poles of the Earth, yet while they are so Violently laid in an opposite Position, they still retein their own Individual Center, *Axis*, Poles, and *Aequator*, apparently distinct, and opposite to those of the Earth; and in that Position will turn another less Magnet freely suspended within the Orb thereof from the Poles of the Earth to their own Poles. Now that the Earth itself doth never vary its own Polarity, we may sensibly perceiv by these *Terræ*, and their Natural Polarity, and Verticity; as by the Director, but especially by the Inclinator Needle, which being carried about the Earth always Inclines the Southern Pole thereof more toward the Northern, as it is neerer to it, and the Northern Pole thereof toward the Southern Pole of the Earth, as it is neerer to it, and so accordingly



changes its Poles and Perpendicularity (whence I suppose it is also called the Dipping Needle) and which plainly proveth that the Polar Virtue is not from any North Starr, as some have fancied; for the Southern Polarity is not only a Consequence of the Northern, nor that of it, but both are equally Polar in themselves; and the Needle accordingly changeth the Inclination of both its Poles; which also the Directory Needle doth, as farr as it can, by a little bowing down of its Poles toward one of the Poles of the Earth. Nor is the Polarity from both Northern and Southern *Effluvia*, as others affirm, which cannot penetrate Glass, as Magnetical Virtue doth; for neither is there any penetration of several Bodys, nor is Glass Porous, nor yet Fluid, as Water, or Air, or the like, wherein we may suppose a Cession to any such Imperceptible Corpuscles; which are only the Spawn of *Epicurus* his Atoms, and can never be perceived by Sens in any greater or less Bodys so to pass; nor are any *Phænomena* themselves, and yet are Introduced to solv the *Phænomena*: and though they be supposed to be so Imperceptibly Minute, yet must not only Move little Needles, but also contain the vast Magnetike Earth in its constant Polar Position, against all the furious assaults of Air and Water, and the conjoined force of their Storms and Tempests, being such as could easily divert these Corporeal *Effluvia*, and so prevent their *Impetus*; which yet must be supposed to be the same in a Calm or in a Storm, becaus the Magnetike Operations are the same. Wherefore plainly it is a Spiritual Quality Subsisting in the Substantial Spirit of the Magnet, and both Inherent in it, and Emanant from it, like Light, though in another maner, as I shall shew hereafter, and it doth only require Consistence and Drines as Social Qualitys of the same Element, as Light doth Heat; and also Density of the Matter, as they do Rarity; and by the want therof may be Corrupted, as well as they; and so Magnets by Rust, Contusion, and the like, may lose their Actual Virtue, not becaus they are contrary unto it, but becaus they disorder the Body therof, as Wounds do Vegetative and Sensitive Bodys. Certainly the Magnetical Virtue in a Needle is not from any Northern and Southern Atoms or Corpuscles, for plainly it is Excited by another Magnet Actually, being what it is Potentially before in itself: which evidently appears by the very quick and sudden Actuation therof, almost like Heat, and Light, or Sound, and the like; though

though it will last longer in the State of Actuality then they, because it hath no Contrary to oppugn and Corrupt it, like them: and yet rubbing it with another Magnet the contrary way doth as soon reduce it to Potentiality, by drawing it from its Polar Longitude, and destroying the *Axis* thereof; (and nothing doth more approve the Doctrine of Potentiality then such Experiments) The Magnetical Virtue and Motions thereof are most evidently discovered by the Magnetical Needle carried about a round *Terrella*; for at the *Aequator* it doth apply itself Laterally to the Magnetical *Terrella* and Parallel to the *Axis*, because the *Aequator* of the Magnet, or *Terrella*, doth equally attract the *Aequator* of the Needle, as also the Poles of the Magnet do the Poles of the Needle, when it is so applied to either of them. And when it hath passed the *Aequator*, the Correspondent Pole of the Needle begins to Incline, and to point to the Correspondent Pole of the Magnet, and so more and more, untill it be Perpendicularly Erected at the very Pole; And it is half Erected, and makes a right Angle with the middle of the *Axis* of the Magnet, though I suppose not exactly in the midst thereof, unless we estimate it according to the Oval Arch of the Magnetike Virtue: yet because after it hath passed the very *Aequator* of the Magnet, it doth no longer apply itself Laterally, having both its Poles equidistant from the Magnet, but presently begins to touch the Magnet obliquely with one Pole pointing to the Correspondent Pole of the Magnet, I also suppose, that either Pole of the Magnet doth not attract beyond its own Hemisphere, Northern, or Southern; (but the Magnet being Polar doth attract Circumferentially from the Center) for otherwise it should still cause the Needle to apply itself to the Magnet with some part of the Side thereof, though less, and less, and not touch it Immediately with the Pole, untill it be Erected Perpendicularly at the Correspondent Pole of the Magnet; as if two Chords were fastned to the two Poles or ends of the Needle, and drawn through Hooks or Staples fixed at each Pole of the Magnet, and so the Needle by them drawn beyond the *Aequator* thereof, by pulling in one Chord, and letting out the other; yet it should still apply part of the Side thereof to the Magnet, though less, and less, as I shewed: but I refer this *Hypothesis* to more Curious trial and examination. Also it may be tried, how much less the Attractive Power of the *Aequator* is then of the Poles:



for certainly the Magnetical Virtue is not equally Orbicular, but rather Oval, (and that perhaps may discover it, as I before intimated) though we call it an Orb, and it may be so; as there is an Orb of the Emanation of Light from an Elliptical, or other Inorbicular Lucid Body, and yet the Power therof is not equally Orbicular, as I have shewed: for though the Circumferential Extension from the Center be equal, yet the Circumferential Power in that Extension may be unequal: however it is evident in Magnets that though they be Orbicular, yet their Virtue is Oval; and so in their Orbs of Magnetical Emanations, the Virtue is greater at the Poles, and neerer to them proportionably, and less at the *Aequator*, and neerer to it proportionably. And not only the Center, but also the Poles are very Points; as may appear by two Needles placed at one of the Poles, which will thrust one against another to attain the very Polar Point, which doth most strongly attract them; and therefore Divaricate at their other ends: as they must according to Statike Law; for there can be no Angular Point of two several Lines concurring in it, without a Divergence of the two Lines from it. Now in this Circular cours of the Needle about the round Magnet it is very observable, that if it be moved about it at a distance, it doth observ the Poles and *Aequator* of the Orb of the Emanant, and not the Inherent Virtue therof, in the Magnet it self, though the Emanant Virtue be not Corporeal (nor indeed the Inherent) as the Magnetike Body is: which I have already proved in discoursing of Emanant Light, and may appear more manifestly by Magnetike Emanations, which penetrate not only Imporous Glass, but any other Bodys whatsoever. Now whereas it is a general Magnetike Rule, that the Correspondent Pole of one Magnet to another is of a contrary Denomination, as of North to South, and South to North, the Magnets are accordingly found to Conform themselves, and the less Magnet will turn about itself so to apply its Correspondent Pole unto the other: which is no Flight of each others Poles, as some have supposed, but a Concordance, and Conformity according to the Magnetike Law of their Nature: and it doth so, not only by Contact of the greater Magnet, but at any distance within the Emanant Orb therof; because as the Inherent and Emanant Virtue of the same Magnet make one Intire Orb of the Magnetical  
Virtue

Virtue therof, though of feveral and unequal Powers; fo alfo doth the lefs Magnet endeavour thus to Conform itfelf within the Orb of the greater Magnet. And it may be tried, whether, as two feveral Lights in the fame place do Colluminate, fo thefe two Magnetike Virtues being fo placed together do Co-operate by their Emanant Virtues. Alfo if one and the fame Magnet be divided into feveral Magnets, the Individual Polarity of the Whole will be doubled; and accordingly as they are made by the Diffection two lefs Wholes, fo they will alfo have two Individually lefs Magnetike Virtues; and according to the Diffection fo will the Polarity of each of them be: for if the Magnet be diffected by a Line cutting the *Axis* and Parallel to the *Aequator*, then the Poles, Center, *Axis* and *Aequator*, are only doubled; that is, the former Northern Pole in the one, and Southern Pole in the other, ftill remain, and where the Diffection is, there is a new Southern Pole oppofite to the former Northern Pole, and a new Northern Pole oppofite to the former Southern Pole, and the *Axis* is divided into two, and the former Center and *Aequator* are alfo changed into two new Centers and *Aequators* conformable to the Pofition of thefe double Poles: but if the Magnet be diffected by a Line cutting the *Aequator* and Parallel to the *Axis*, then the Continuity remaining untill the Diffection be finifhed, (which doth end toward one of the Poles) it is as if Wax were fo divided by a Diffection almoft throughout, but did ftick together only at one end; and then the two branches therof produced and erected one above another, and after the upper part wholly fevered from the neather, whereby that laft Diffection doth not cutt the *Aequator*, as the firft did, but the *Axis*, by a Line Parallel to the *Aequator*, as in the former Inftance: and if we could fuppofe the Magnet to be fo produced and erected Corporealy, and then wholly fevered, there would be one Pole at the end of the greater part of the Magnet, which we will fuppofe to continue in the fame Pofition as it was before; and the other part, which is firft divided, and then fuppofed to be fo produced and erected above it, muft neceffarily have another Pole oppofite therunto, and confequently to that which itfelf had before when it was conjoined to the other; and fo when it is wholly fevered, that part feems to acquire two new Poles of contrary Denominations to the other, though indeed the



the reason thereof be only the same, as of the former Experiment; and they are all only Correspondences, according to the Magnetike Law; whereby, as I said, North doth Correspond to South, and South to North: and so every Point of the *Axis* between the North Pole and the Center is Southern in respect of it, though it be within the Northern Hemisphere of the whole Magnet; as *England* is Southern in respect of the North Pole, or *Greenland*, though Northern in respect of the *Aequator*, or *Aethiopia*, and so likewise every Point between the South Pole and Center is Southern; and thus if the Magnet be divided by a Line cutting the *Axis* in any Point, the Correspondence of the Poles still remains, and if it cut the *Aequator*, yet in effect it is the same at last, as I have shewed by the Instance of Wax so dissected, and then produced and erected, and afterward severed: and though this be not so effected Corporeally in the dissection of a Magnet, yet the Spiritual Virtue thereof being dissected at one end, and continued at the other, doth so produce itself, and run through the whole Body, that the part dissected will Correspond Magnetically with that part from which it is last severed, whether, according to the Dissection, it be requisite that it be of the same, or of a contrary Denomination. And hereby we may plainly perceiv the Real Individuality of any Elementary *Compositum*, while it is Continuous in itself and Discontinued from others, and the Individual Oeconomy thereof in itself; for so the Magnet, while it is one, hath but one Center, *Axis*, Poles, and *Aequator*; and as soon as it is Discontinued, the two Parts have each of them all the same *Apparatus* which is doubled, and so even Elementary Spirits have their Oeconomy, and are Conforted by Majoration and Consociation, as I have shewed. And these two Elements, *Aether*, and *Earth*, have not only their Inherent Qualities, but also Emanant; because they are most remote, and therefore their Emanations are their Emissarys, whereby to operate at distance; whereas *Water*, and *Air*, have their *Effluvia*: but I know not whether they also have any such Emanant Qualities (which deserves farther Inquisition) for *Water*, and *Air* may otherwise Operate at distance; that is, *Water* by Vapors, and *Air* by its own Body, which enters into any Pores of other Bodys, or may be Introsucted through them by their Cession, if they be Fluid, as Bubbles are through *Water*. These two Emanant

nant Qualities of Æther, and Earth, are Analogous in some respects: for both Subsist in their Inherent Qualities, and Bodys, and from them pass Locally into other Bodys; and perhaps they may both Cooperate within the same Orb, though only Locally United, and not Spiritually Mist together; but the Polarity of the less Magnet is not varied presently by being placed within the Orb of a greater, or by the Earth itself, nor can Cooperate, if it do not Conform unto the greater Magnet, at the *Aquator*, or either of the Poles thereof, as the Needle to the round *Terrella*, but ly in another Position, East and West, or the like; for then I rather suppose that they hinder one another, and attract severally, more or less, according to their several Virtues, untill the greater Magnet can alter the Inherent Polarity of the less; and consequently the Emanation thereof. Also they differ in many other things, as in that which I have mentioned, that the Emanant Orb of a round Magnets Body is not of equal Circumferential Power, like the Luminous Orb of a Starr, or other such Orbicular Lucid Body; which plainly proves Magnetical Virtue and Planetary to be very different; and that Magnetical Virtue having no Contrary, like Light, or Heat, is not Refracted, or Reflected; and so the *Radii* thereof cannot be conspissated and Intended, as the Sunbeams by a Burning glass. And though they do both attract, yet their Attraction is also very different: for Magnets do only attract such other Bodys that are either Actually or Potentially Magnetical, and wherof the Potentiality is first Actuated by them: so that it is indeed rather a Concourse or mutual Embrace of both, then Attraction of one by the other, like the Attraction of Heat; and Heat may attract cold Bodys as well as hott; for though Cold be contrary to Heat, yet it is not contrary to the Attractive Virtue thereof, which doth attract a cold Body, as it is a Body generally, whether hott or cold; and is hindred only by the Gravity thereof, which is also some *Remora* to Magnetike Attraction, though both that, and Heat, if they can once overcome the Gravity of the Body attracted, do attract with a very quick and smart Motion by their Emanant Rays; and the Magnet very notably, so that an Iron wheel, or Steel *Pendulum*, will either be wholly staid by a Magnet, and suspended like the Inclinatoriy Needle; or otherwise Move as freely, as if it were out of the Orb thereof by its own Gravity: for though Motion of Matter is *per Gradum*, yet Spiritual Moti-



ons are *per Saltum*; and so are Motions by Elastical *Potentia*, as a Bullet Sucked up in the Barrell of a Musket by a mans breath staieth so long as the Gravity therof can resist the Elasticity of the Air Expanded by the Exuction, and then being overcome, leaps up very suddenly and violently; and, as I suppose, equally, like the Planetary Motion of the  $\text{\AA}$  her. The Attraction of Heat is either by the Inherent Quality therof, which though our new Philosophers deride, yet it is most evident, not only by the Attractive Power of the Vital Heat in Sensitive Bodys Internally, but also Externally of the Heat of Wooll, raw Silk, hott Spices, *Tobacco*, and many Medicaments, which do notably draw; and it may be also very strong, yea stronger then the draught of Hors, or Ox, as all workmen in Furnaces and Saliworks can attest. And this Attraction of Inherent Heat may be not only Immediately by Contact, but also Mediatly by the Emanation therof, as in the former Instances: but if the Inherent Heat be not constant, and Fixed, as if it be excited by a litle rubbing, or otherwise, so as it is ready to return again suddenly into its Potentiality, then it attracteth not constantly, but suddenly in a special maner, which is called Electricity, and appears by such rubbing of *Electrum* or Amber, Jett, hard Wax, and some Stones: and is somewhat like to Elasticity, but from another reason; for that is only by violent Expansion of a Body, which the Spirit therof again reducing to its former Density, doth thereby draw other Bodys after it to avoid Vacuity, as I have said: whereas Electricity is by the sudden Generation of Heat, which accordingly emitteth its Emanant Rays, and then this sudden Calesfaction as suddenly ceasing, and the Inherent Heat returning into its Potentiality, the Emanant Rays, which do Subsist in it, must also return into it, and in their Retreat or Resilience, which, as I have shewed, is very sudden and momentaneous, bring back with them small Bodys within the Orb therof, whose Gravity doth not hinder and prevail against the Spiritual *Potentia* therof: whereas a more Constant and Fixed Heat, though it may otherwise draw more strongly and durably, yet doth not attract so Electrically; as may appear by hard Wax melted, which will not attract so Electrically, as if it be only rubbed, and not melted: nor doth the Heat of Flame attract Electrically, though it be very sudden and momentaneous; because it as suddenly passeth away in the Fume  
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and Body therof; but yet the Successive Fire therof in the Candle or Wood doth attract, like Inherent Heat; And heerby it plainly appears that Emanant Rays do Sublist in, and flow from the Inherent Quality in the Substance, becaus they do thus return to it again; and that even Emanant Accidents, though they flow forth out of their Substances, yet do not Migrate into others, becaus they do thus return to them again. And now upon this occasion, and more fully to explain this very strange Electrical Motion, as I have before discoursed of the Motion of Matter to Union, or Station, Recumbence, or Succumbence, (which though Local Motions, are only such as leaning to, or falling on, without any Active Power or Strength) so I shall now discours of the Motions of Spirits, which are properly Active and Vigorous, and truly Spiritual: and such are the Motions of Elementary Spirits, which are the very lowest *Classis* of all Substantial Activitys. Thus Heat and Moisture Rarefy their own Bodys of Matter, as may appear in Fusion; and Cold and Drines Condensate them again, when they return to their Consistence: and in all these Variations of the Density or Rarity of their Bodys, there is a Local Motion of the Matter itself Intrinsically in the Body therof, otherwise there should be no such Rarefaction and Condensation; and the Motion of the Matter therein is only Passive, but the Motive *Potentia* of the Spirit, which by its Qualitys doth so Intrinsically Distend and Contract its own Body, is properly Active, as well as when it doth Extrinsically Expand or Compress another Body; which it may do consequentially by Rarefying or Condensating its own Body: for so Fire by Rarefying the Powder into Flame and Fume doth explode a Buller; and though when it Densifieth its own Body the next commonly succeeds by Motion of the Matter to prevent Vacuity, yet this notable Instance of Electricity and all other Attractions by Heat shew also how it may attract another Body, not only by Concursion, as two Magnets mutually meet one another, but by plain drawing without any Corporeal Instruments, and Immediately by its own Spiritual Power, which Spirits have in themselves, as plainly appears by the Motive Power of Angels, who are purely Immaterial, and yet most swiftly Move themselvs, and most strongly other Bodys; as our Saviors Body was so carried up to the Pinnacle of the Temple: and yet according to that



Universal Oeconomy of Nature and Combination of all the Scale therof, as Angels cannot Move so soon through a greater Space as a less, so I suppose also that they cannot Move so easily through a more Dens Body as a more Rare (as I have also observed of the Magnetike Virtue) nor Move a more Heavy Body as easily as a more Light: and though they are the most Excellent and Potent Spirits, and so among other Titles called *Powers*, yet their Motive Power plainly declares how a Spirit may Immediately Move a Body of Matter, and that Materialists strangely err, who suppose that Matter can only be Moved by Matter, or Bodys by Bodys: for indeed Spirits, which are Substantial Activitys, are made purposely to Act and Move the Matter: and so all other Inferior Spirits, though less Potent, may Move it less Powerfully, according to their several Natures and Orders; that is, Material Spirits Move it more Materially, and one by another; as Sensitive by the mediation of Vegetative, and Vegetative by the mediation of Elementary, according to the Scale of Nature, as I shall shew heerafter; but Elementary, which immediately Consubstantiate the Matter, may Immediately Move it, as I have before shewed, both Intrinsically, and Extrinsically, with very forcible and violent Motions: as in Thunder, Shooting in a Gun, and Rarefaction of Water into Vapors; whereby very great Execution may be done, yea, as great as by firing of Gunpowder, which indeed is only Rarefaction by Incension; and yet without Incension, if the Rarefaction be as much and as sudden, it hath the same Effect, because there is one and the same Cause of both; that is, the Rarefaction itself, whether it be one way, or other: and yet it is very considerable, wherefore since the Vaporous Body is also capable of Compression as well as Rarefaction, the Bullet in the Gun should not again Compress the Flame into its former Extension, rather then be itself exploded by the Rarefaction, or, if it cannot be clearly expelled, why the very Gun itself should rather be broken; since Air is strangely Compress'd in a Windgun by less Strength: but I conceive the reason therof to be both the greatness of the Dilatation, which certainly is more proportionably then the Compression; for the Air is never Compress'd so much in the Windgun as to break it, and also the suddenness, whereby the force therof coming all at once (like the delivery of weighty Stones, Arrows, or the like out of Catapults, and Balists)

Balists) doth all together prevail over the resistance, which in longer time and by degrees might prevail against it: and thus if the Rarefaction of Vapor be very great and very sudden, the Execution will be very forcible and quick, and if less, less proportionably: nor can I conceiv any other caus of those vast Eruptions, and Ejaculations of whole Torrents of such massy Matter from Mount *Atna* to so great a distance, but only the great, sudden, and continual Rarefaction of Vapors happening in some fitt Caverns therof. Also the Planetary Motions of those vast Orbs in such rapid and perpetual courses is very wonderful: which yet are only Elementary. Thus Magnetical, Electrical, and Planetary Motions are indeed by such Natural Magike as I have described; and though I also acknowledg that Emanations may be at the greatest distances, and *Effluvia* may pass very farr, yet I cannot conceiv how any Sympathetical Operations can Naturally have an equal Effect at the farthest distance as at the nearest, since no Emanations, *Effluvia*, nor Angels themselves, do, or can so Operate. Now *Effluvia*, as I have said, are of Inherent Qualitys, as odorous, or others, in and with their Vaporous Bodys, and not like Emanations, which are only of Emanant Qualitys, and which, though weaker then Inherent, yet are more Spiritual and Separate from the Matter; and may be easily distinguished from the others; for they penetrate the very Bodys, whereas *Effluvia* only pierce and enter into the Pores therof; also Emanant Qualitys are never Exhausted, but always (while they are in Act and not obstructed) fill their whole Sphere; nor do they weigh, or by their Emanation make their Substantial Bodys to be Lighter; whereas *Effluvia*, though they may be very Rare and Subtile, yet do proportionably diminish their Bodys, and accordingly make them to weigh somewhat less, unless they be also continually renewed. There is also a great Cohesion and Continuation of Homogeneous Bodys, which I have formerly observed, though few of them do so attract or concurr as Magnets. It is said, that Gold doth attract the Fume of Mercury, and workmen use to hold a piece of Gold in their mouths to receiv it, which will be notably silver'd thereby; but that may be only by so much of the Fume as doth happen to fall upon the Gold, as Dew upon leavs of Trees or Herbs; yet certainly when the Mercury doth so fall upon the Gold, it doth notably retein it, being, as I suppose, very Homogeneous

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with it, and that there is much Mercury in the Composition of Gold, and so fixed in it, as that no Fume thereof will again be emitted by any Operation of the most Intense Fire, though never so long continued: but there is also some other predominant Principle in the Composition thereof, which apparently renders it heavier than Mercury; though probably Mercury be one Principle in the Composition of all Metals (except perhaps of Iron which is Magnetical, and will not be Corroded by it.) There is also a Fume emitted in melting Lead somewhat like that of Mercury, very hurtful to workmen, and which doth strangely allure Cats, as a sweet Poison, and thereby kill them. But I shall not proceed to discourse of Metals, and Minerals, and the like, which I conceive to be *Composita*, and the Spirits thereof no Simple Substances, Created in the Beginning, but that they are Mists of such several Simple and Created Principles; and therefore not mentioned in all the Six Days works, though they and all other perfect *Mista* were then also Improperly Created; and so we read of Gold, *Bellum*, and *Onyx*: but this general System mentioneth only such grand *Mista*, as Elements, and Planets; which in the Whole are Ingenerable, and Incorruptible, and therefore are particularly mentioned, as they were so specially Created.

IX. The Earth, being such as I have described, doth plainly declare itself to be Immovable, that is, not apt to Move itself, (if possible to be Moved by any others) Yet there are some, who not by any Natural Power, nor by Faith, but Fancie, can remove, not only Mountains, but the whole Earth; not by heaping and raising it up to Heaven, as the Poets report of the Giants; but, as if they had obtained the Victory for it, can place it among those Idol Gods, *Saturn*, *Jupiter*, *Mars*, and others; which I shall now disprove, having already shewed how the Earth is one whole Element in itself Natural, and only Locally United with Water in the surface thereof, and so made one Terrestrial Globe in this Third Day; but not with the Aery *Expansum*, which was made in the Second Day; and how in the First Day the *Aether* was made to Move about the Earth with the Light therein, Diurnally, which made Day and Night; and that the Earth was not made to Move about it, but remained in its *Chaos*, untill this Third Day. Wherunto I shall add one Text more as a Comment upon

upon the other, being part of that Divine Hymn of Creation, *Who laid the Foundations of the Earth* (or founded the Earth upon its *Basis*) *that it cannot be Moved*. And so where it is said, *The World also is stablished that it cannot be Moved*, it is to be understood of this *Orbis Terra* particularly, as I have shewed; or if any may conceive otherwise, then it shews that the Circumferential Superæther, as well as the Centrical Earth, is Immovable; like the Roof, and Foundation, of an House, which are both Immovable; though other Bodys Move and are Moved therein between them: and though the Roof also may be supposed to be Mobile (as some very great *Amphitheatres* have been turned about) yet the Foundation must be Immobile; otherwise it should not be such a Foundation: and so it is expressly said, that the Earth is so founded upon her *Bases*, that it may not be Moved. Now as the Earth hath no Heat, Planetary Virtue, or the like Active, and Motive Qualities, which might Move it, as Æther; so it hath such as serv to found and fix it, which are therefore called the *Bases* thereof, and *Pillars of the Earth*; whence it is also by others rightly termed *Brutatellus*. Thus, as I have shewed, it is the most Dens of all Bodys, and consequently most Grave; and therefore possesseth the Center of the World, to which it is united, as to another thing, by its own Gravity; wherefore as the Universal Center is Immobile, otherwise it should not be such a Center, so the Gravity of the Earth doth Indissolubly unite it thereunto, unless there can be assigned any other Body in Nature more Grave than it, which might extrude it. Again, as by its own Gravity it is thus united to the Center, so by its own Consistence it doth unite all its Parts together, whereby they will not, nor cannot, Move in the Whole, as Motes in Water: and though it should be supposed to have more Consistent Parts one way than another, yet becaus they are all Consistent, they do not flow every way to fill the Sphere, but all weigh Perpendicularly downward upon the same Center, without any Fluctuation, Trepidation, or Inclination any other way. And to keep it from being Moved in the Whole about the Center any way, it hath Magnetical Virtue to fix it in one determinate Polar Position, North and South; so that it can neither be Moved out of its Place, nor in its Place, but is wholly Immobile. And becaus this Magnetical Virtue of the Earth is the only colorable Cause offered



to prove it Motive, (and so the Planets are also said to be Magnets, and both confounded together, which are most different in Nature) I shall now more largely disprove that Assertion, and thereby plainly prove the Earth not to Move. I have granted the Earth to be Magnetical, and I do also grant the *Æther* to be Planetary; and shall observe a wonderfull Analogy between them; that is, that the Poles of the Earth do so Correspond with the Poles of the *Æther*, that if the Magnetical *Axis* of the Earth were produced, it would Intersect the Poles of the *Æther*, so as it should seem to Move round upon, and about them; for so the Poles of the Earth are North and South, and the Motion of the *Æther* East and West; but though both Earth and *Æther* have their *Axis*, Poles, *Æquator*, and Meridian, and the rest, not only Mathematically, but Physically, as I shall shew heerafter, yet they are not Univocal, as some suppose, becauf they have the same Names, but Equivocal in Nature, and Physically different; for the Earth hath them all for Fixation and Rest, and the *Æther* to direct the Motion thereof, as I shall now shew. I suppose, we all agree, that the Verticity of a Magnet is a Motion from Pole to Pole, that is, from North to South, or from South to North, Meridionally according to the Magnetike *Axis* thereof, and not from East to West, or from West to East, about the *Axis*, and according to the *Æquator* thereof; and also, that if the Earth did Move Diurnally, it must Move from East to West, or West to East, becauf it is so Illuminated. Now I say, that no Magnet doth, or can so Move, but only from North to South, or from South to North, as may be tried by any Magnet, or *Terrella*, which hath Verticity: Wherefore they greatly err who affirm any such Motion of the Earth, or of any Magnet about its *Axis*; for indeed, if it should so Move about its *Axis*, according to the *Æquator*, it could not also Move from Pole to Pole, according to the Meridian, as I shall also shew heerafter. Nor did the Antients so express the Earth to Move about its *Axis*, but *Circa Medium*, or about its Center; which yet, as I have shewed, it cannot do Diurnally, becauf that Motion is according to the *Æquator*. Again, Verticity which is the only Motion of one and the same Magnet by itself is not Circular, but only from Pole to Pole Semicircularly; and Concurfion of one Magnet to another is not Circular, but Directly Progressive; and therefore it may not be Imagined, that the

the Earth, or Planets, do so Magnetically Move one about another, as I shall shew heerafter. And though the Verticity of the Earth be Potentially in it, yet it never is, nor shall be Actual; for unless it could be Moved from its Polar Position, there is no need nor use therof: and such Potentialitys, though they be never reduced into Act, are not vain, becaus they are Hypothetical, and first suppose a violence, which Nature abhorreth: and so Superæther, as it is Matter, hath Motion as well as all other Bodys Potentially, but never Actually: and so the whole Earth hath also Gravity, and the like. And as I have now disproved this pretended Motion of the Earth, by the Magnetical virtue therof, so I know no other Caus assigned of such a rapid Motion therof as must be supposed, that is, about fifteen Miles every Minute Diurnaly, and almost fifty Annually; and the Distance between our Accesses, and Recesses to, or from the fixed Starrs, should be about eight Millions of Miles (which is a large stride) and yet we perceiv no difference therot, as we do of *Mars*, who is placed in the fifth Sphere. Nor is there any difference of a Bullet shott from a Gun East, or West, as there should be very consyderably according to this common Calculation, and so of a Bullet drop'd from a Steeple: but they say, the Bullet also is a *Terrella*, and Moves with the Motion of the Earth; and would prove it by the fallacious Experiment of an Arrow shot upright from a Ship sailing, and falling down again in the same place: but then if the Steeple also were removed, as much as the Ship saileth, the Bullet dropped from it should follow it, which certainly is not according to the Motion of the Earth, or *Terrella*: and therefore to defend this they have invented another worst Absurdity: That there is, I know not what, Magical Line of Motion still continuing and interceding between the Mover and Moved, after the Impression past, and Contact discontinued: but neither doth the Arrow flying spin any such Corporeal Thread or Line, like a Spider; nor the Archer shooting emitt any such Spiritual *Radium*, like Emanant Heat, which may so direct the Motion. Certainly a Parthian, who shoots flying, or a Ship sailing, do not draw back the Arrow or Bullet after them; nor will Stones so fall into the hand of a Boy playing at Checkstone, without any answerable Motion therof, whereby to catch them. Neither is there any such



Magnetical Stake reaching from the Subcortical Earth, through the *Cortex*, Water, and Air, and, as some say, to the Moon; for Magnetical Virtue hath no such long or strong Orb, like Light, or Heat; as no particular Magnet, or *Terrella*, doth Eradiate like a Candle, or Spark of Fire. Or if it should, yet it could not Move Magnetically any other Body, that is not Magnetical, or indeed that is not Consistent; as a Stake in a Pond cannot direct the Motion of the Water in it, or Air above it; because they are Fluid and not Consistent. Certainly Birds in the Air, though more Consistent, are not Magnetical; and though a Bullet of Iron be Consistent, and Magnetical, Potentially, yet if it be not so Actually, the former Experiments will be the same, as if it were; and if it have the Magnetical Virtue thereof Actually excited in itself, then it is a *Terrella* in itself, and consequently, if the Earth, which is the great Magnet, Move round, so should every such *Terrella*, which it doth not, as may be tried by any such round Bullet, or Magnet, placed upon its *Axis* in the most exact *Aequilibrium*: whereas every part of Water, severed from the Element thereof, is Water, having all the Property's thereof; and so should every such Magnet be a *Terrella*, as indeed they call it, having all the Magnetical Property's thereof: and some Magnetical Doctors do therefore affirm, very falsely, that a *Terrella* so placed will Move round like the Earth; who thereby, very truly, acknowledge this Consequence; that if the Earth so Move, the *Terrella* must also so Move; wherefore since the *Terrella* doth not so Move, neither doth the Earth so Move: and though a Bullet flying when it is shot from a Gun, by that Violent Motion, doth also Move round, as I have formerly shewed from another reason; yet that may be any other way as well as the same way with the supposed Motion of the Earth; and the Bullet drop'd from a Steeple, and so falling downward, by a Natural Motion, doth not, as I suppose, Move round, or not the same way with the supposed Motion of the Earth. Thus every less Magnet, not being one and the same with the Earth, but Individually such in itself, and having its own Poles, *Axis*, Center, and *Aequator*, as well as the Earth, (as may appear if it be laid East and West, in which Position it will a long time retain its own Polarity, not only different, but advers to the Polarity of the Earth, which

which is North and South) by its own Immobility doth also Sensibly prove the Immobility of the Earth. And yet we must believe all the Motions therof, which some Philosophers very confidently Suppose, and vehemently Impose upon us, maugre all our own Faith, Reason, and Sense; because they tell us Scripture is Popular, Reason Ancipitous, and Sense Fallacious; and so all other men must be governed only by the Magistracy of their Fancies, which, whatsoever it may be to themselves, is certainly no more to others then they can prove by Scripture, Reason, and Sense; in which there is no Fallacy, but only in our Apprehensions, which are indeed our Infirmities, and ought to be rectified and corrected by other right Ratiocinations and Sensations, and not by other Imaginations. Thus whereas I have granted that supposing the Earth to Move constantly and equally, though never so swiftly, if we were also carried on it, we should not feel it to Move; because we our selves do not Move, and yet I say, that our Bodys, being also in the Air, should feel themselves Moved against the Air, though never so calm, but especially when the Wind bloweth the other way against the pretended Motion of the Earth, which certainly could not be Insensible; but, as I rather suppose, Intolerable; if their Imagination did not also Summove the Air for us, by supposing both Water and Air to be parts of the great Magnet, the Earth; which is as contrary to all Sense as the other: this Insensibility or Deception of Sense ought to be rectified by other right Sensations, and not by such other Imaginations and Insensibilities. Again, according to the very Analogy of Deception, as the Sense senseth falsely in one case, so it doth likewise in all like cases, because there is the same reason therof: And now also I will examine the supposed Motion of the Earth according to this Analogy of that Deception, which they so strongly urge for it, and I shall only change that Verse (which is their usual Text) accordingly

*Provehimur Terra, Caelum Stellaeque recedunt:*

and so as a Man in a Ship sailing by the Shore seems to see the Earth and Towns to Move, which do not, and doth not feel himself to be Moved, as indeed he is, if he were so Moved by the Motion of the Earth, which must be two hundred times more swiftly then any Ship doth sail, he should seem to see the Moon and Planets to Move Visibly, which he doth not: and though



against this is objected the greater distance of the Moon and Starrs; yet that is recompensed by their greater Magnitude, which renders them Visible proportionably according to the distance; and by the far greater and swifter Motion: and so let the Man in the Ship sailing with full Sail, though against the pretended Motion of the Earth, behold the Moon and Starrs Transversely, and observe whether they do not seem to Move, otherwise then when he standeth on the Earth, or when the Ship, wherein he is, doth not sail. There is one who saith that both the Earth and also the *Æther* do Move; becaus, as he supposeth, while one Moveth from the other, the other also Moveth from it; and so that it is all one and the same, whether we affirm the Earth or *Æther* to Move; whereby he can solv this very *Phænomenon* of their Motion either way, which I have already refuted; and I know none besides himself that did ever maintein it; but generally others affirm the Earth to Move, and *Æther* not to Move; becaus they suppose all the consequent *Phænomena* may be solved either way: who if they can find out any Error, which they think is Tenible, though it be not Truth, they affect and embrace it rather then Truth, and can pleasethemselves in amusing the World therewith, which is a very Falsarious and Disingenuous Humor, and more proper to Juglers and Impostors then Philosophers. And becaus I scarcely know any Opinion wherein they more exercise this Art, then this of the Motion of the Earth, as I have already disproved it, so I shall also heerafter prove the Motion of the *Æther* and Sun, and therein shew how all the *Phænomena* can only be solved thereby; and shall now proceed to refute that other grand Error, which is indeed more Fundamental and Universal, that is, their Doctrine of Matter and Motion. Wherefore having discoursed of the Terraqueous Globe, I shall review it, and consyder whether only Matter and Motion could produce the Spirits and Spiritual Qualitys therof; certainly not Moisture, which is the same whether the Water be Stagnant, or Fluent; nor Drines which is generally Consistent, and so of the rest (which to prosecute particularly were supervacaneous) but I will now only alter the Scene, and transfer it from Air and *Æther* to Water; and suppose it to be Tepid, that is, partly Hott, and partly Cold, and also Luminous, as it is Diaphanous, and we will admitt it Sonorous and Saporous, and if you pleas, Odorous; besides Moisture, and the  
other

other Simple Qualitys therof; all which may be in the same Instant *per omnia Puncta* of the Water: and if all these which are so Specifically different in their own Nature, could be only so many several Motions of the same Matter, and we might Microscopically behold them, we should see a most strange Moorish dance, not only of every dancing Corpuscle, but, even in every Joint and Point therof, so many several different and advers ways as must be assigned to make all their several Natures Specificall, and Individual, Simple, and Compound, which is indeed Impossible, and so ridiculous, as needeth no farther refutation. Again, once more we will alter the Scene from Water to Earth; which becaus I have affirmed to be Immovable in the whole Body of the Matter therof, and also the Spirits and Spiritual Qualitys therof to be least Active, I will likewise inquire into one thing more, which I doubt our new Philosophers had forgott, and that is, whether as Motion in others, so also Rest in the Matter of Earth may not produce the Spirit and Spiritual Qualitys therof, as Drines, and others? which though they be indeed less Active then others, yet they are Active and Motive in themselves: and so Consistence though it be most like the Rest of Matter, yet hath a Strength and Center therof, very different from that of the Matter, which also of itself is Fluid, as I have shewed: and Magnetike Virtue, though it affect Polar Rest, yet hath also an Intrinsicall Motion of Verticity in itself to restore it unto it. Nor can all the Terreous Qualitys be only less Active Motions of the Matter, becaus they are all in the same Instant *per omnia Puncta* in the same Matter, and cannot be so made severally by one and the same Motion of the Matter, nor can there be so many several Motions therof together, whether more or less Active; whereas all the Terreous Qualitys may be Actually together in the same Matter, as I have before sufficiently declared of all the other Elements, and their Spirits and Spiritual Qualitys; and I now shall conclude, that even Elementary Spirits and Qualitys are somewhat more, and other, then either Mater and Motion, or Matter and Rest.

X. As Matter is Subordinate to the Elementary Spirits, which do Immediately Consubstantiate it, so are they with the Matter to Vegetative Spirits, as I have shewed in the Scale of Nature:



and so Vegetatives were not produced untill the Elements were all Perfected, becauf Vegetatives require an Elementary Miftion of them all, and indeed, a proper Miftion therof, which every Spirit ordereth and governeth, both as Subordinate and Subfervient to itfelf; but they are not governed by the fpecial Influence of any Planet or Starr, as the Rabbins fay, there is not a Starr in Heaven which doth not point to an Herb on Earth, and bid it grow; for as the Globe of Light in the First Day fufficed to make Day and Night, fo alfo the Heat therof was fufficient for Vegetation; as may plainly appear, in that Vegetatives were produced before the Sun, Moon, or Starrs, (and fo alfo Metalls, though others afcribe the Production therof to Planets) which yet are more particularly Infervient and Beneficial to them; as they do alfo more particularly vary Days and Nights, and all the Seasons of the Year. But Vegetatives were, and ftill are produced out of the Earth, or Terraqueous Globe, as it is moiftned with Water; for the Earth is the Region both of Vegetatives, and Sensitives, and alfo of Man: and fo it is faid, *The Earth brought forth Grafs, &c.* and it is obferved that the firft *Produxit* is of Vegetatives; for the Elements which Immediately Conftitute the Matter were not produced, but fo Created in, and with it, in the Begining, whereby they were then Denominated Heavens and Earth, and fo are Infeperably united unto it, though they were afterward Perfected in their Miftions, and production of their Qualitys thereby, as I have fhewed; and fo there is no *Produxit* of Planets, becauf they alfo are Elementary: wheras, though Vegetative Spirits were Created in the Begining, as it is faid, *God made every Plant of the field before it was in the Earth, and every Herb before it grew*; yet they were only Latent in their Elements, and not produced, before the Elements were Perfected in their Miftions and Qualitys; which was previous and requifite to their production, as they alfo were to the production of Sensitives, as I fhall fhew heerafter: and though Vegetatives are of a farr higher and more excellent nature then Elements, yet they were Created in this fame Third Day, wherein Earth and Water were Perfected, and were pregnant and parturient of them, and they ready to be produced, to fhew the Continuation of the Work of Creation by God, who never Relted untill the laft Instant of the Sixth Day, as I fhall fhew heerafter, and alfo the Combination of the Superior

perior Natures with the Inferior; as Man also was Created in the same last Day with Beasts: yet neither could the Elements so Perfected, (and much less Matter) so produce them, nor they produce themselves, as the Earth now brings them forth, and they Generate others, untill God said, *Let the Earth bring forth Grass, &c.* or as it is Originally, *Germinet germen*; which imports another way of special production, then the Mixture of Elements, that is, by Germination or growing out of the Earth, so as no Elementary *Mista* are brought forth, and therefore plainly Stones, Metalls, Minerals, and the like, do not Vegetate; for they are neither Grass, Herbs, nor Trees, nor of any such Kind, but only Elementary *Composita*, and Classically Inferior to Vegetatives (and so also are the Planets and Starrs, as I shall shew hereafter) nor are they of any middle nature between Elementary and Vegetative, because there are no such *Participia* in the Scale of Nature; and though Elementary Spirits are so far forth Plastical, as to superinduce a requisite Density or Rarity in their Bodys of Matter, and some Regular Figuration, as Orbicular, and sometimes perhaps Angular; yet they do not Organise them, and make such Members, and Joints, and the whole *Compages* thereof, as the Bodys of Vegetatives certainly; they have no Vegetative Nutrition, Augmentation, and Generation, though they may seem to Grow by Accretion, as Fire doth Generate Fire Univocally in Bodys pregnant therewith; nor do they grow or sprout of the Earth; or as it is said, *upon the Earth*, as *Germins*; but abide in their Element. Also Vegetatives commonly grow out of them, as well as out of Earth, and not only Moss, and Ivy, and the like, but great Trees are seen to grow out of Stones, Rooting into them, and as I suppose, cleaving them asunder, if perhaps the Seeds did not first fall into such clefts; otherwise it is a Noble Instance of the Predominant *Potentia* of Vegetative Spirits over Elementary: for the Root of the Tree is a far softer Body then the Stone, and therefore cannot cleave it by any Corporeal, but only by a Spiritual Power: whereas I have seen a Birch grow out of an Oak, and not cleave it; which, as I suppose, was produced first by a Seed falling into the Crown of the Oak, where was some Earth, wherein it first Rooted itself, and so grew to be another Individual and Intire Tree in itself; and not like a Branch Ingrafted into another Tree, having one and the same



same common Root : and whereas all Vegetatives have Roots, certainly no Metalls, or Starrs, or the like, have any; and Stones are only Poetically termed Vive, when they are in their proper Beds, but neither Live, nor Vegetate, any more then when they are out of them. And indeed though Vegetatives do Vegetate, yet they do not properly Live, as I shall shew heerafter, but all their Operations, though farr above Elementary, are as farr below Sensitive; and are as Subordinate to Sensitive Spirits, as Elementary are to them: but as Elementary are Milt one with another, and Composited only with the Matter, so Vegetatives are Composited with them, and are the first kind of Spirits that are Composited with other Spirits; and therefore are first said to be produced, as I have shewed. And as Elementary *Composita* are variously Milt among themselves, and by their various Qualities, (which are many more then only one First with a Second Quality of another Element attending it, as some have very falsely supposed, in every one of them) and by all the Changes thereof, in their Compositions, and Decompositions, as I have observed, whereby Glas, Stones, Metalls, Minerals, and such like only Elementary things, are Generated; so, as I said, there are Ligneous, and other Elementary *Mista*, properly Subordinate unto Vegetatives, and most probably some proper Miltion to every *Species* thereof, as there is a proper Vegetative Spirit Subordinate to every Sensitive *Species*: for certainly the proper Plactical Virtue of any Grasse, Herb, or Tree, which doth accordingly Organise and Effigiate it, cannot Organise and Effigiate another Specifically different from it, and much less any Sensitive Body, which yet is so Organised and Effigiated by a Vegetative Spirit, as I shall shew heerafter: nor indeed can the proper Qualities of one Spirit Subsist in another; which to affirm, as some do, is more absurd then Migration of Accidents, as it is more to produce any thing Originally out of itself, then being first produced by another to receive and entertein it into itself: nor yet hath any Superior Spirit Eminently, as they say, in itself the proper Qualities of any Inferior Spirit, because they are proper to the other; which though Inferior, yet hath also its own proper excellency, whereby it is known to be, and indeed is what it is; and so Vegetative Spirits only do Vegetate, as well as Sensitive only Sense, and Intellective only understand. Thus though there are fower Elements, and no more, of which all the  
various

various Elementary *Mista* are made, yet Vegetative Spirits are Indefinite, and so it is Indefinitely said of them, that they were brought forth after their Kinds; and perhaps Vegetative Spirits are more various then any others, becaus they are also Subordinate to every Sensitive *Species*, wheras there is only one Sensitive Spirit so Subordinate to Intellective, that is, to the Spirit of Man. But though the *Species* of Vegetatives are not enumerated, yet there are three *Genera* therof mentioned, Grass, Herbs, and Trees, if the same Word *German* may also signify *Gramen*, and be not only a general Name of all Vegetatives, which then must be subdivided only into Herbs, and Trees, (as they only are mentioned afterward to be for food of Man) but as it is often rendred Grass, so I rather conceiv it in the largest sens: certainly it is not only a Tender Blade, for they were all made Perfect and Mature; and wheras Herbs are said to have Seed, and Trees Fruit, if there is Grass also, which hath neither Fruit, nor Seed, I conceiv it ought so to be intended therof. Yet I do not suppose Mold, or the like, to be any perfect Vegetatives, Immediately Created by God, but rather Meteorical Vegetative *Composita*, and only Imperfect Rudiments of Vegetation; and so likewise the Excreescences of Vegetatives, as Jews Ear, Sponk, Agarike, and the like, which are somewhat like Wens in Sensitive; as there are such *Anomala* of any Material Spirits, which are Generable and Corruptible, though neither of Matter, nor Immaterial Spirits, which are Ingenerable and Incorruptible. And thus I suppose Vegetatives growing in Water, as Duckweed, and the like, to be Anomalous; for it is said of perfect Vegetatives in their Creation, Let the Earth bring them forth; and so they were said to be upon the Earth, and not upon the Water: and as all Grass hath a Root, so I conceiv any Vegetative which hath no Root, to be Anomalous. Also Moss, and Sponge, which is a kind of Seamos, are Imperfect Grass; but that which we commonly call Grass, having a Root, Leaf, and Spire of Grass, is, as I suppose, the first perfect Vegetative. And I shall consyder first the Root, which is a Bulbous Substance, and hath generally more of the Vegetative Virtue in it then the Blade of Grass, or *Calamus* of Herbs, or solid Trunk of a Tree, being also Esculent and Medicinal; and is in itself the Mouth of Vegetatives sett Downward in the Earth, wheras the Mouths of Sensitive are Upward, and not fixed to their



Element, but more discontinued, becaus Sensitive Spirits are not so united to the Matter as Vegetative, nor Vegetative as Elementary. Also though the Root be the Mouth, and partly as the Stomach of Vegetatives, yet the upper parts of Plants above the Earth do likewise perform the Concoction, as may appear by a Cion, which doth over-rule the Stock heerin; and the Concoction in the Root is for Nourishment of itself, and perhaps preparatory for the upper parts, as that of the Oak is for Ivy, or Mistleto; for properly Plants have no Stomach, or such a common Coquine, as Sensitives; though as they have a more special and proper Elementary Mition which they order and govern for themselves, as I said, so consequently a Radical Heat, Moisture, and those other Qualitys, with a certein Proportion and *Acme* therof, to which they grow up, and then decay again, as well as Sensitives: but these seem not to be so Powerfull and Operative in themselves, as the Vital Heat, and the like, in Sensitives, and are much assisted by external Heat, and the like, and therefore grow most in hotter and moister weather: and this Woodmen observ in their situation to the Sun and Winds, and notably in cutting Wood in the Spring, that as the Air is more hott, or cold, and the Wind changeth from South to North, the Sap will rise and fall again, as Water in a Weatherglass: but it riseth in hotter, and falleth in colder weather, and not contrarily, as it doth in the Weatherglass, becaus it is not ruled by any such Expansion, and Elastical *Potentia*, as I have shewed of the open Weatherglass, but only by Rarefaction of the Juyce itself, which plainly causeth it to ascend through the Pores or Cavitys of the Plant, like Vapor in the Air: nor are the inward parts of Vegetatives so Actually hott, as of Sensitives, whose Concoction is generally best performed, when the Ambient Air is more Cold, and not as of Vegetatives; when it is more hott. Yet the upper parts of Plants seem also to Attract by their Heat, though not so much as Sensitives. It is a Curiosity much affected to make Equivocal Plants and Fruits, which cannot be so well effected as in Sensitives, whose Seeds are Fluid, and more easily Mist; though I conceiv the most probable way to be by some Unition of their Seeds, and especially such as are Homogeneous, or more Homoeogeneous, as Mules are commonly Generated by the Mition of Equine and Asinine Seeds: also it may

may be tried by Union of their Roots, but then care must be had in flitting and dividing them; for Gardiners say there is a Centrical part of the Root, which if it be pricked through with a Pin, it will never grow; as there is an *Apex* or *Gemma* which Ants bite off in Seeds. The Leaf or Blade of Grass, which is only an Ornament of other Plants, is the Body therof above ground, and is more Esculent then Leavs of Trees; but both Blades and Leavs are generally Green, which is a most equally Mist, and therefore most gratefull and inoffensive Color, and so most fit for their common Covering; and they plainly shew, how Green is Mist of Blew and Yellow, for when the Blew, which is more Opacous, and Subsists in the stronger Juice, decays, together with it the Leavs turn Yellow, and fall. The next Rank is of Herbs, which besides Leavs have a Stalk to exalt and support them, interceding between the Root and the Leavs; and that is generally an hollow *Calamus*, not so strong and Ligneous as the Trunks of Trees, but more Stramineous, and first only a Blade of Grass, and not any *Surgulus*, and it is commonly strengthened by Joints and Knotts, which also serv, as Valvs, to retain the Vaporous Sap ascending in them; and besides Leavs they have commonly Flowers, and are so denominated *Flores*. And of this kind the lowest is such Grass as hath Seeds and a Flower, or Efflorescence, as Corn, before it be perfect Seed; and the Seed is commonly in the Flower, which is a more delicate kind of Leaf, and composed of more refined and concocted Sap, having also generally more Color or Odor, or both; but very rarely is Green, to distinguish it from common Leavs; and hardly ever Black of itself, though Leavs and Flowers are often made so by Adustion, as when Dews falling on them are adusted by a Torrid heat, they turn Blackish, whereas ordinary Vegetation is by a more moderate *Tepor*: and yet there are Blackberrys, and such like Fruits, which are first of some other Color, and by an high Concoction are made Blackish to the sight; but their Juice doth hardly Denigrate, or Dy Black, like perfect Adustion; as Mossy Wood charked will be throughly Black, both in the Wood, Bark, and Moss: The Seed is of an higher nature then the Flower, not only more Esculent and Medicinal generally, but also containing another Individual Spirit of the same *Species* in itself, whereby the



Plant doth Univocally Generate after its Kind, as I have shew-  
 ed. The Third sort is of all other perfect Vegetatives, which  
 are neither of the others; and they are described to be Ligne-  
 ous, as the Original word imports, that is, Arboreous; and  
 though some of them, as Vines, Brambles, and the like, be less  
 Ligneous, and need other Trees to support them, yet themselves  
 also are Trees, according to this general distribution of Plants,  
 and we do not call them Herbs; as Terrene Reptiles are Beasts,  
 and not Fishes. And all Trees grow up first from softer *Surculi*,  
 which afterward may become so firm, that they are not only  
 Ligneous, but seem almost to be Saxeous, as *Lignum vita*, Ebo-  
 ny, Brasile wood, and the like Trees of a more strong and  
 Terreous Juice. I have seen Oaken wood digged out of the  
 Sea Beach (where formerly the Tree had grown, and was over-  
 thrown and overwhelmed by Inundations, after long lying in  
 the Salt Juice therof) as hard and firm as the beforementio-  
 ned. Corall also, which is a *Frutex* of the Rocks, is very hard,  
 when it is out of the Water; and perhaps not so very tender  
 under it as is commonly reported; though when the thick Juice  
 therof is desiccated, it is most Lapideous. And I suppose some  
 such cold and gross Juice is the cause of Petrification; not so  
 much by Conglaciati<sup>o</sup>n, as by reduction of a fitt Juice in the  
 Body therof to such a Consistence; and plainly Stones of Fruits  
 are so denominated from their almost Saxeous hardnes. where-  
 by they become such Caskets for Seeds, which are Natures  
 Gemms; and yet we cannot conceiv their Induration to be any  
 Conglaciati<sup>o</sup>n, but rather Desiccation; for Earth and Water  
 are most Congenerous Elements, and as they are composed into  
 one Terraqueous Globe, so they have a greater Intermisti<sup>o</sup>n:  
 and as Metalls may become Fluid by Fusion, so may these *Succi*  
 be Indurated and fixed by Drines and Consistence; though as  
 Heat is assistant in the one, so may Cold be in the other. But  
 Trunks of Trees, though not hollow as Stalks of Herbs, have  
 their Porous passages through which the Sap doth ascend, and  
 commonly by the most Spongy part therof, that is, the Pith,  
 which is formed by the Bubbling and Spumeous Vapor ascend-  
 ing in it, and is fixed by degrees; as may be seen by Birds  
 Quills, which have little Bladders left in the Cavities therof,  
 though their Pith is more Constipated in the Feather. And  
 there

there is observed to be some such hollownes in Hairs; and both Feathers and Hairs are Vegetatives, though Subordinate parts of Sensitive Bodys; and yet they have neither Seed, nor Root properly, becaus they are not properly Individuals in themselves, but parts of others; and so they are Analogous to Leavs and Flowers, and of as Beautifull and more strong Colors, and many of them perfectly Black. Also the Sap doth not only ascend through the Pith, but notably between the Wood and the Bark; and in the ascent is Concocted into Wood every year, as may appear by the Circles therof very visibly in more sappy Trees, as Willow, Ash, Birch, and the like, whereby, knowing the several years growth therof, you may compute the Gain or Loss, according to the proportion of the Majority of the latter Circles, and Interest of the yearly Rents precedent: and the Sap may also rise between these Circles, and through the very Pores of the Wood, as Bloud in Sensitive Bodys may Transudate through the Flesh; for the Tree will sprout, and shoot forth, every where; and hollow Trees without any Pith may bear Fruit: and indeed the Bark or Skin, which is outward, is more requisite to the Vegetation of the Tree, then the Pith or *Medulla*, which is inward: and as it will hardly Live, as they term it, without a Bark, so if that be bound, it will not thrive, which therefore is cured by cutting: for, as I said, Vegetative Spirits in Plants being much assisted by the Temperature of External Qualitys (as also by Internal in *Animals*) are as easily hurt by the Distemperature therof, from which the Bark servs to defend it; and as it so defends the Body of the Tree, it thereby suffers much weather-beating and aduasion in itself, which makes it so Rugous and harsh. And becaus the External Heat draws the Sap outward, as well as upward, therefore the Pith is commonly Insipid, but the Bark very strong and Stiptike, as may appear by Tan; and so is the Wood itself more then Pith, as appears by the Salivous Oil of Oaken wood which issueth out at the ends in burning, and is very Astringent and Desiccating: so also the Rinds of some Fruits, as Oranges, Lemons, Citrons, and the like, are very Spirituous and Sapid; but then that Pith, which is next to them, is very Insipid. There is another Character of Trees, which is their Fruit; not particularly of every Kind of them, for all



are not Frugiferous, but generally, becaus most of them are such, and others which are not so, yet being Ligneous, and otherwise like unto them (and so not to be accounted Herbs, or Grass) are therefore also Trees: and they are generally thus described, becaus this was the chief end of Vegetatives, to be food for Sensitives; and the Fruits are most Esculent, wherein also, as in Flowers of Herbs, the Seeds of Trees are contained more Immediately, as it is so said, *whose Seed is in it*. All Plants grow out of the Earth Perpendicularly, and so the Earth doth nourish them: and thus all Grounds bear only according to the Plane or Levell therof, and not according to any Convex or Concave *Superficies*: as a Park may be Impaled with as few Pales, though the ground be rising and Indented, as if it were plain and Poll; becaus all the Pales stand Perpendicularly, though it require more Rail proportionably, becaus the Rail runs Horizontally according to the *Superficies*, and yet we thus measure and purchase Lands, which bring forth the other way. And heer I shall observe, that wheras it is said, *The Earth brought forth Grass, and Herb yielding Seed after his Kind, and the Tree yielding Fruit, whose Seed was in itself*, God in these Six Days made them and all other things in their *Acme* of Perfection, as well as *Adam* in his Adult State, and so every way Good; for thus Vegetatives were made not only Complete in themselves, but pregnant with their Seeds, and ready to propagate others; and to this Individual Perfection of Vegetatives and Sensitives was added the Divine Benediction, *Increase and Multiply*; according to the Kind Specifically: and so God having sett in order Original Generation by Improper Creation, as I have shewed, transmitted it to the Successive Generations of Nature. And wheras it is a common Problem whether any Poisonous Vegetatives, or otherwise Noxious, as Briars, and Thorns, were before the Fall and Curse? I suppose by Analogy of Nature, that as then, though there could be no Elementary Qualitys Actually Existing in their Extremitys, yet they were very Intens and Predominant in their own Elementary Bodys; as the Qualitys of Fire in *Æther*, and of Water in the Sea, which might destroy Sensitive *Animals*, if they should be Locally in them; wheras they were so ordered, that they were very Gratefull and Usefull to them; so also that there were Vegetatives in the same Excessive degrees of Quality,

litys, as now, which we therefore call Poisons in respect to *Animals*, though they be indeed Eminences of Nature in themselves; and so also Briars, and Thorns, and such others, as are no Anomalous but Perfect Plants: but I suppose that *Animals* were preserved from Poisons by a Natural Abhorrence, and Discretion, having all their most exact Senses, and Bodily Temperaments, which would not accept of any other food then what was suitable therunto; and so they might also avoid Briars, and Thorns, and the like, as they pleased; whose Berrys are also food for Fowls: but I also suppose that there was no such Excessive Quantity therof, as since; and that this was the import of that Curse of the Earth, *Thorns and Thistles it shall bring forth*; that is, wheras before of itself it brought forth abundantly all sorts of Vegetative food for Man and Beasts, and such Poisonous Herbs, and Noxious Plants, as rarely as it doth now good Fruits; so then *vice versa* it should bring forth abundantly Weeds, Thorns, and Thistles, and the like. Thus I have briefly and generally discoursed of Vegetatives, as before of the fower Elements, according to this Divine History, which is an Universal System of the World, both in the Proper and Improper Creation therof: nor do I intend any particular Historys of them, as *Solomon* spake of them all, from the Ceder of *Lebanon* to the Hyssop that is on the wall. But heer, before I conclude, I shall again desire any who will rightly consider the Nature of Vegetatives, to try whether they also may be made only by Matter and Motion, without their own proper Plastical Spirits, which the Earth did bring forth; and as I have observed the fower Elements were before perfected and prepared in order therunto, without which the Matter alone, as so considered in itself (though indeed it can never be without the Consubstantiation of Elementary or the Superæthereal Spirit) hath no Automatus Motion of itself, nor, when it is dislocated, any other then to Union and Station, as I have shewed, which is only to recover its due Rest and Position; and therefore certainly it cannot also Move from Rest, which is Naturally contrary therunto, (as Verticity is to Polar Position, and therefore cannot be from it) nor hath it any such Plastical Virtue of itself which may guide the Motions therof, but would be only Equidens and Orbicular; wheras Plastical Formation of all Vegetative Bodys, and much more



more of the Bodys of Sensitives, is constantly so Symmetrical Organical and Curious according to every Kind, and *Species*, and the successive Propagation therof, and they so very various and different, that he who will not believ Divine Authority, nor Natural Reason heerin, may satisfy himself by his own Sensation, and making use of his Microscope Inspect the most admirable Structure and Mechanism of the least Vegetative, or Sensitive, which is composed farr otherwise, and beyond the most admired workmanship of any *Bezaleel*, *Dadalm*, *Apelles*, or *Archytas*, and all the Mechanical Borcherys of Art (which yet is all that some will allow to Nature itself) and when he shall have considered the most exact and Mathematical Conformitys of the one, and Enormitys of the other (which also shews that Mathematical Exactnes is not, nor cannot be, of Common Use) he may easily judg with himself, that since the Intellective Spirit of the most Ingenious Man cannot effect the like, certainly it must either still be Immediately *Digitus Dei*, and so deny this whole History of Creation in the Six Days, and all the Works of God therin, whereby he did sett in order the Courf of Nature, and consequently deny all Created Nature; or otherwise acknowledg it to be the continual Succession of the same Natural Causalitys, which also lead us back again to the Acknowledgment and Adoration of the Supernatural Creator, who is the only Author and Institutor therof.

XI. Wherefore let us praise the great Creator of Heaven and Earth, as for the Æthereal, so also for the Aereal Heaven, and for the Water, and the Earth. And heer we must sing his praises in Confort for them all together, as it is once said of them all, that they were Good; though they be in themselvs several Elements, and were perfected in two several Days. Nor is the Goodnes of Vegetatives, which is another *Classis* of Creatures, though also perfected in the last of these two Days, pronounced of them, which were before declared Good; but becaus these three Inferior Elements, Air, Water, and Earth, being separated from the Æther by the rapid Motion, and Circumvolution therof about them, and more conjunct among themselvs, were not perfected one without the other; and the Water (which is the middle Element, and contributed to the Perfection both of the Air,

and

and of the Earth, by ascending in Vapors into the Air, and descending itself into the Canales and Pores of the Earth) was not perfected untill this last Day; nor in that alone, but in both these two Days; therefore this Proclamation of their Goodnes and Perfection was reserved for the Consummation of the whole Work of both the Days, and then Relatively to be distributed to all the three Elements, which were so perfected therein: and so they now continue to be Severally, and also Mutually Good. And the Æther, which was before made Good in itself, yet had not been Good to others without the Goodnes of the Air; whose Refrigerating Cold doth Temper the vehement Heat, and Refracting Pellucidity the Lucidity of all the Æthereal Luminaries; whereby not only as a common Thorough-fare, but also as a Cooperator therein, it both adapts and conveys the Æthereal Blessings of Rays above, and also the Spirituous Vapors of the Waters beneath (which as an *Almbic*, it distills and refunds) to the Terraqueous Globe. Nor is it only thus Concurrent with Æther, and Water, and the Influences thereof, but hath in itself the *Ventos* of Winds, both to Cool and Purify the Atmosphere, and all the Organs of those admirable Sounds, which it doth propagate continually and successively, and which as so many *Cursores* or swift Messengers make their Reports through the whole Sphere thereof, and all the Surface of the Earth: and so is made to be the Cymbal of Nature, which with its Inchanting Musike ravisheth or affrighteth, all Sensitive Spirits; and whereby Men Discourse and Convers one with another, and in Sacred Hymns render their gratefull praises of the whole Creation to the Divine Creator: Also the Atmosphere thereof is the very Breath and Life of *Animals*. Neither doth the more Dens Water intercept all the Benefits of Æther, and Air, but partly transmitt them to the Earth, which it contempers with its own Moisture, and is as the Bloud Circulating through the Veins and Arterys thereof by constant Reciprocations; conveying Nutriment to all the Cortical Body thereof, being both the Inexhaustible Fountain of Drink to all Sensitive, and also conditing their Meats with most gratefull Savors, and perfuming them with variety of most delicate Odors. And though both these Elements of Air, and Water, seem very Weak and Infirm, in comparison of the Rapid Æther, and Robust Earth; yet being provoked and armed to execute Divine Revenge, they



so mutually assist and fortify one another, with unusual and unexpected Rage, that Conflagrations, and Earthquakes, do not much exceed their furious *Herricans*, and violent Inundations. The Earth, though last and lowest of all the Elements, is not only their most Dense and Consistent Fulciment, and Center of their Situation, but also of all their Offices and Services Circumferentially tending unto it; being the Foundation of the whole Univers, and another Orb in itself, and *Epitome* of the great Globe; wherof all the rest are only Concave Spheres, having only some particular Orbs in themselves; and on which all those Luminous Orbs cast their smiling Aspects, and the Sun Illustrateth all the other Luminarys, that so they together with himself may give Light unto it: which the nimble Air fanneth and refrigerateth with the Wings of Wind, and watereth the great Garden therof with Dews and Rains: and the officious Water runneth up and down to wash the face of the dusty *Cortex*, and to bath and supple all the Limbs therof; and also floweth forward and backward to carry and recarry the greatest Burdens from Shore to Shore. Thus all the other more Active Elements, as so many Circumsistent Servitors, in their severall Courses and Orders, minister unto Earth; which sitting still and resting in itself receiveth all their Homages and Tributes, not Moving, nor being Moved with all their Disorders and Confusions; but founded on the Solid Base of its own Density and Gravity, and strengthened by its own Consistence, and fixed by its own Polarity doth also by its other Qualitys fix all the more subtile and volatile Elementary Spirits. Which covereth its own Nakednes with the Dædalous Embroidery of Leavs and Flowers, and enricheth itself, not only with the Stock of all the hid Treasures of Jewells, Metalls, and Minerals; but also with all the Rents and Revenues of Annual Fruits and Profits both producing and mainteining all Vegetatives, and the chief of Sensitive *Animals*, yea, Man himself, whose Body is also formed of the Congenerous Dust; and so the Earth, which is given to the children of Men, is the Stage of this great *Amphitheater* of the World, wherein all the present Affairs therof are transacted; and as all the other Elements are now subservient therunto, so heerafter also the Superæther, or Heaven of Heavens, shall be the everlasting Mansion of Blessed Souls.

And now again let us tune our praises to an higher Note, and  
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b'efs God for the Creation of Vegetatives, Grasse, Herbs, and Trees: and let us contemplate their several Kinds, and Virtues, which yet are Innumerable and Unknown to us; their Curious Formations, and Oeconomical Administrations; the careless Comelines of their Leavs, and Beautys of their Flowers; the general conformity of their Greenness to our Sight, and the delightfull varieties of all their other Colors: how wonderfully they Compose, Nourish, and Augment their own Bodys, and Generate others; and having neither Sens, nor Intellect in themselves, yet by their own Innate Plastical Virtues perform such works, as no Sens, or Intellect, can Imitate, or sufficiently Admire. The Microscopical perfection wherof doth exactly correspond with the most Critical Sens, and Organical usefulness with the most Political Intellect. And as God in the Beginning Immediately Created the Heavens and the Earth, and the great Building of the whole World, so they Mediate build all the Domicils, and Officines, of their own, and all Superior Bodys, as the Architects therof, and *Va'cans* of all their Organs and Instruments: and are themselves, together with the Subordinate Elements and Matter, the Immediate Bodys of all Sensitive Spirits, wherein they Reside, and Operate: and both Dress and Digest for them all their Nutriment, wherof a great part is of the same Vegetative Nature, which affordeth not only Salads for delight, but solid food for strongest *Animals*, Horses, Bulls, and the great *Behemoth*; furnishing also Mans Table with *wine, that maketh glad the Heart of Man, and Oil to make his Face to shine, and Bread which strengthneth Mans Heart.* Renewing the Annual Fruits of the Earth as fast as all the *Animals* can devour them; which in Mans better State were his sole Dier, and since he tasted of their only forbidden Fruit, are his Physick, or Natures Tree of Life for healing of the Nations.



## SECTION X.

And God said, Let there be Lights in the Firmament of Heaven, to divide the Day from the Night. And let them be for Signes, and for Seasons, and for Days, and for Years. And let them be for Lights in the Firmament of Heaven to give Light upon the Earth. And it was so. And God made two great Lights, the greater Light to rule the Day, and the lesser Light to rule the Night. He made the Starrs also. And God sett them in the Firmament of Heaven to give Light upon the Earth, and to rule over the Day, and over the Night, and to divide the Light from the Darknes. And God saw that it was Good. And the Evening and the Morning Were the Fourth Day.

## EXPLICATION.

God having in the First Day made the Light, and by it one Hemisphere of the Æther more Luminous then the other, and thereby Day and Night Artificial in that first Day Natural, which did accordingly succeed in the two following Days; now in this Fourth Day did more particularly

larly distinguish them by the several Luminarys, which he made therein for that purpose, and also for Significations of Times, and Seasons, Months, and Years, and all the variations thereof. And he made two chief Lights, the Sun to rule the Day, and the Moon to rule the Night. Also he severally made all the Starrs according to their several natures; And so sett all these Heavenly Luminarys in their several Positions in the *Æther*, to run their several Courses therein, and thereby to Illuminate the Earth, and to make all the said Divisions and Distinctions of Time, which was their Goodnes and Perfection. And these were the Works of the Fourth Day.

### ILLUSTRATION.

1. Of the *Æthereal Luminarys.* 2. Of the Sun. 3. Of the Moon. 4. Of the Starrs. 5. Of Comets. 6. Of the Goodnes of the Works of the Fourth Day.

I. **W**E now proceed to discours of the Second Part of Creation; wherein, when God had before perfected and prepared all the fower Elements, and planted the Earth, which was the last, with Vegetatives, which he produced out of it, he began now to Introduce into them all their more Locomotive Inhabitants: and to shew the Connexion of both these two Parts of Creation, it is again said of the first Created Light, *Sit, or Fiat Luminaria*, wherunto, as I suppose, the Singular Number doth refer, and that it must be so understood, *Lux fiat Luminaria*, for it is afterward *Sint* or *Fiant* Plurality. And I also observ, that whereas it is said of all the other Days Works, when they were finished and perfected, generally, *God saw that it was Good*; it is said of that first Created Light more particularly, *God saw the Light that it was Good*; though also afterward in the same Day he divided the Light from the Darkness: but as I have before observed of the three Inferior Elements, Air, Water, and Earth, that it is not said, *God saw that it was Good*, untill they were all



perfected, and the whole Work finished; so though Day and Night Artificial were made generally by the division of the Light from the Darknes in the First Day Natural, yet becaus they were also to be more particularly distinguished by the Luminarys, and to be so ruled by the two great Lights expressly made for that purpose, that is, the Sun to rule the Day, and the Moon to rule the Night, therefore the Goodnes is not pronounced of Day and Night in the First Day, but in this Fourth Day, wherein the whole perfection therof was consummated: so accurately exact is God the Author of Nature, and Scripture, both in his Operation, and Expressions. And though the common Light, and Day and Night thereby, in *Æther*, and the ascent of Vapors in Air, and eduction of Earth above the Waters, and madefaction therof by them, was sufficient for the production of Vegetatives, which therupon were Immediately produced, as I have shewed; yet before the Introduction of Fishes and Fowls into the Water, and Air; and Beasts and Man into Earth; it was requisite that the *Æther*, which Sensitive *Animals* only can behold, and by the Light therof all other Spectable things, should be made perfect and complete, and adorned with all the various Luminarys, sett in their various Positions, and runing their severall Courses, and so ordered and disposed as might best serv both for the Sensation of Sensitive *Animals*, and Contemplation of Intellective Man. And though these Luminarys were made after Vegetatives, yet they are not therefore Vegetative, or of a Superior Nature above Vegetatives, as Vegetatives are above all that were made before them, and as Man the chief of all was made last; for though indeed this Order is observed in each of the Parts of the Creation; and so the Creatures made in the last were respectively more excellent, then they which were made in the first Part therof; yet the Luminarys, which were made in the first of the last three Days, are much Inferior to Vegetatives, which were made in the last of the three first Days; for they are Elementary, and of the Elementary *Classis*, though chief *Composita* of the chief Element, *Æther*: but all Elements and Elementary things are Classically below Vegetatives; and though Planets have Locomotion out of their places, which Vegetatives have not, but only in their places, being all Rooted in the Earth; yet Locomotion is also in the Matter, when it is dislocated, and indeed

no Material Spirit can so elevate their Bodys and caus them to ascend, as Matter doth necessarily to Union, and to prevent Vacuity, as I have shewed: and much less are the Planets Sensitive, or Intellective in themselves, or any such Deitys or *Dæmons*, as the Idolatry of Heathens made them; and their Philosophy durst not contradict; nor yet Moved by Intelligences or Angels, as the Rabbins and Scholemen suppose: for they can be only External Movers thereof, whereas Planets Move by their own Natural Power, and Intrinsic Virtue, like the Verticity of Magnets, and are not Moved like Studds fixed in solid Spheres, as I have proved, and as the Eccentric Motions of the Planets therein do thereby plainly disprove; and therefore others affirm them to be Magnets, and the Earth, which is the great Magnet, to be a Planet; but certainly *Æther* and Earth are two different Elements, having different Elementary Spirits, wherein the same Qualities cannot Subsist, as I have shewed; and so the *Æther* cannot be Magnetical, nor the Earth Planetary, unless we can also make the *Æther* to be Terrestrial, and the Earth *Æthereal*; whereas Heaven and Earth are generally contradistinguished in the Beginning, and particularly *Æther* and Earth were made two several Elements in two several Days: and *Æther* being, as I have shewed, Fluid, cannot possibly be Magnetical, which requires a very solid Consistence; certainly the whole *Æther*, which is a Concave Sphere, cannot be so Magnetical as Earth, which is an Orbicular Globe; for it cannot have an *Axis*, and consequently Magnetical Poles; as if a Ring of Iron be touched with a Loadstone, it will have only one Pole: and though the *Æthereal* Planets be Orbs, yet they also are Fluid: and Sensibly all *Æthereal* Motions are Circular and Perpetual; whereas Magnetical Verticity is only Polar, or to a Pole, and not round about the Center, nor about an *Axis*, like Motion of Planets, but to the Poles thereof, when by Trepidation it passeth beyond them; and so Moving its own *Axis* the same way, that is, Meridionally, and not according to the *Equator* of its own Body, as I have shewed: whereas if Earth, and Water, and Air, as they say, and also *Æther*, and the Planets, were all Magnetical, they should make one Magnetical Orb, and all Move one and the same way; which plainly they do not: or if otherwise one be Moved about another, as they say the Moon is about the Earth, it should observ the Magnetike Law, which, it doth.



doth not, as I shall heerafter demonstrate of the Moon. Thus the Magnetical Planetary Motions are very different, and indeed opposite in their very Natures, and Ends; for Planetary Virtue makes the Planets to abhor all Rest, and Magnetical Verticity is to reduce Magnets to their Polar Rest. Wherefore we may not confound them, though they are both Elementary Motions, and not only Motions of the Matter, or only by the *Pondus* therof, as the Flux and Reflux of Water; nor by Impuls, like Winds in the Air, wherof I have formerly discoursed; nor yet any Vegetative, Sensitive, or Intellective Motions, wherof I shall discourse heerafter: as indeed all things are Motive or Mobile one way or other within the whole Globe of the World, and the Circumferential Superæther, and Centrical Earth are only Immobile: and as we are Sensibly satisfied concerning Magnetical Verticity, so thereby we may conceiv of these other Planetary Virtues, which God produced in this Fourth Day in the Planets, as he did before the Magnetical Virtue in the Earth and Magnets. Whereby also it plainly appears that Motion is not only of the Matter, but also that Elementary Spirits may have a Motive and Directive Power in themselves, as well as any other Superior Spirits; and from their different kinds and ways of Motion we may collect the very different Motive Powers and Virtues of the several Movers: wherof Matter is most general, and only tending unto a State of Rest in the whole Body therof, and Center of itself; whereas Magnets have a more particular Position of their Bodys, which is Polar Rest, North and South, and a Verticity particularly to reduce them to it; and Planets have their several and various Positions, and Courses, and an answerable Planetary Virtue, which so setteth them, and Moves them, and makes them to abhor all Rest, and Vegetative Spirits are more Plastical, but Involuntary, and Sensitive Spontaneous or Voluntary Movers, and more indifferent either to Motion or Rest. And thus as Magnetical Bodys may Move from Pole to Pole Semicircularly by their Magnetical Verticity, so we may very well conceiv how also Planets may Move Circularly, which is only a continuation of Motion through the whole Circle, whereby also they may so Move Perpetually; and as the Needle doth leap to the Loadstone by the Magnetical Virtue Actuated in itself, which Motion is Progressively Locomotive, so may also Planets by their Planetary Virtue, which

which is always Actual in them, Move Progressively in the Circles which they describe; but though the Magnetical Virtue which setteth the Magnetical Body in one determinate Polar Position may be removed, as I have shewed, and pass from that part of the Magnet wherein it now seats itself, and which thereby becomes Polar, unto any other part thereof, and so render that Polar, as may be sensibly seen in any *Terrella*, (whereby it is plainly proved that the Magnetical Virtue is a Spiritual Quality, which can so remove itself from any part of the Body of the Matter to another, and not any fixed Affection of the Matter itself) yet Planetary Virtue, being seated in the whole Orbicular Body of the Planet, doth not, nor can it, so remove itself; becaus it always possesseth the whole Body, not Polarly, or Ovaly, but Orbicularly; or at least it is therefore not to be discerned so to vary its own Situation in the Planetary Body. Now, as God in the First Day did Actuate that proper *Æthereal Virtue*, which also may be termed Planetary, causing it thereby to Move about the Inferior Globe from East to West in fower and twenty hours or therabout, whereby he made Day and Night, which could not otherwise be, without such a Circumgyration of the *Æther*, and of the Globe of Light therein, as now the *Æther* doth still Move with all the Planets and Starrs in it, (whose Planetary Virtue is diversified into several other Motions, which yet are all only Planetary Motion Generically; as if, wheras the Polar Position of the Magnetike Earth is only North and South, God should have diversified it in other Magnets or *Terrella*, and made some East and West, and so to any other Points) so it is also said that in this Fourth Day he made *Lights in the Firmament of Heaven to divide the Day from the Night*; that is, to cauf more particular Variations thereof, longer, or shorter, sooner, or later, and the like; which must be by their Planetary Virtues Actuated in them, whereby they Move respectively in the *Æther*, as the *Æther* doth about the Inferior Globe; and so they were not only for Days, but also for Years, Months, and the like, which, though more or less then the Solar Year, are the respective Years of their particular Planets, Lunar, Jovial, or the like, as we commonly call them. And so God made not only the two great Lights to rule the Day and the Night, (that is, the Sun and Moon as both Scripture and Nature do declare) but it is said, *He made the Starrs also.* And

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God



God sett them in the Firmament of Heaven, so as to perform these several Offices by all their various Courses. Thus I conceive that the *Æther* having the Planetary Virtue therof Actuated in it in the First Day, when God said, *Let there be Light*, a great part of that *Æthereal Light* was divided from the common Light of *Æther*, which was left and still is in the whole Body thereof, though not so Visible to us; and that Globe of Light, as it was generally Connatural with the *Æthereal Light*, being in one Hemisphere of *Æther*, was carried about Diurnally by it and with it, and not any other way by any special Planetary Virtue in itself, which was not Actuated before this Fourth Day; but that this common Globe of Light so divided, and wherof we have no other account, was the *Chaos* of the Potentialitys of all the Planetary Virtues, which were afterward educed out of it; and that then they were not only Moved in and with the common *Æther* Diurnally, but by their own special Planetary Virtues Predominant in them, and directing every one of them to Move according to their several Courses; for though Locomotive Virtue be common to *Æther*, and all *Æthereal* Bodys, yet the Motion of *Æther* from East to West Diurnally was by a proper Planetary Virtue, as I have said, Actuated in it, when God so divided it from that Globe of Light (which is eminently called Light and made Day; and so mutually that Globe of Light) from the rest of the *Æther*, and *Æthereal Light*, (which is Comparatively called Darknes, becaus it made only Night, as I have shewed) And so this particular *Chaos* of all the Planetary Potentialitys being so divided from the common *Æther*, and not having any Planetary Virtue Actuated therein, was carried about in and with the common *Æther* in the three First Days; and then it was again divided into all the particular Planets, and all their particular Planetary Virtues were respectively Actuated therein, and by those special Planetary Virtues they perform all their several Planetary Motions and Courses. Nor is it less wonderfull, if we rightly consyder it, how they Move in their several Zodiaks; being indeed no such Gemmeous Studds, or *Bulle*, fixed in the *Æther*, as some have imagined; for both the *Æther*, and they also, being *Æthereal* Bodys, are Fluid; nor do they Fly, or swim therein, by any Spontaneous Power, like Fowls in the Air, and Fishes in the Sea, becaus they are not Spontaneous: but they are all

*Æthernall,*

*Ætheruli*, as I may so term them; and so their Original Globe of Light was only such a particular Portion of the common Body of *Æther*, not differing from the rest, but only as it was more Lucid; for so it is said of the formation thereof, that *God divided the Light from the Darknes*, in the *Æther*, but not any part of the *Æther* from the Light; or the Light from it: nor is the Body of the Sun, or any Planet, more Condensated, as I have shewed; though they shall heerafter sink through the Fluid *Æther* to the Air and Earth at the Last Day, when they shall be discomposed and disordered, whereas now they are Connaturally adapted to the *Æthereal Heaven*: and so it is said of the Light; *Fiat Luminaria in Expanso*, and they are all equally Expanded in it; but their Light is farr more Conspissated, as it was in their Original *Glebus*: and yet such Conspissation of a Spiritual Quality doth not make the Lucid Body to be more Dens or Grave, which also proves Light not to be Corporeal, but a Spiritual Quality, as I have said: and indeed, as all Heat doth Naturally Rarefy, so should they be rather made more Rare and Light thereby, but that *Æthereal Bodys* are already as Rare as any Elementary Power can make them to be; and yet though we may easily conceiv them, being Equirare with the common Body of *Æther*, to be poised therein, as Glas Bubbles in Water: it is also to be considered, why, or how, they should still Move in their Regular Circularitys, and not to be diverted or removed, as such Glas Bubbles may very easily be: and we have the true account heerof in the Text, *Posuit*, he sett them so at first, and so they are still continued, not by an Immediate Manutenance; as he doth not Move them by an Immediate Manuduction, but by the same Planetary Virtue Actuated in them, and causing them Naturally so to Move in their own Zodiaks. Now becaus, as I have observed, there is no *Produxit* of any of these Planets, as there was before of Vegetatives, and afterward of Sensitives; and indeed, becaus there was such a Globe of Light decided before from the *Æther*, which was the common *Chass* of them all, and wherof they were so many particular Decisions, I conceiv that they were so many several *Composita* made thereof, whereby they are all thus different, and several one from another, as they are all from the Planetary *Æther*, (as it is said *God divided between their Light and the other Æthereal Light*) and that every



one of them is a Specifically different *Compositum* in itself: and that every Individual Planet is such a *Phœnix* in its kind, that it is also a whole *Species* in itself: wherefore it is said that God particularly made, not only the two great *Lights*, but the *Starrs* also, and so it is said, *There is one Glory of the Sun*, and another of the *Moon*, and another *Glory of the Starrs*; for one *Starr* differeth from another *Starr* in *Glory*. And therefore their Creation is thus specially mentioned, and was the whole Work of this Fourth Day, and so I conceive, there are no such *Aethereal Composita*, as *Stones*, *Metalls*, *Minerals*, are *Terrestrial Composita*, and wherof no such special Creation is mentioned, as I have observed; but neither that there is a Simple Spirit of every one of them, Created in the Beginning by a Proper Creation. And I conceive that these vast *Individua*, which are also so many *Species* in themselves, made Immediately by God, as I said, can neither be Naturally diminished, nor multiplied, as *Comets*, which are *Anomalous*, may be: for so the *Starrs* are said to be forever, and it is said of God their Creator and Preserver, *He telleth the number of the Starrs*, he calleth them all by their *Names*, though Supernaturally and Miraculously he may compose a new *Starr*, as probably that which appeared at our Saviours Birth was such an extraordinary *Starr*, and so is specially called, *His Starr*; which yet did not continue, but, after it had performed the End for which it was made, was again dissolved: for otherwise the Ordinances of Heaven, which are said to be Unchangeable, should be changed, and the *Constellations* therof disordered. And though the *Starrs* be every one such a several *Species*, yet there is also a Combination of them all generally, as they are all one Host, and of some more specially, which are called *Constellations*, and are not only such in Name, but also described to be such in Nature: so whereas it is heer said, that God made the greater Light, that is, the *Sun*, to rule the Day, and the less, that is, the *Moon*, to rule the Night, the Psalmist saith, *To him that made great Lights, &c. The Sun to rule by Day, &c. The Moon and Starrs to rule by Night, &c.* where he divideth the *Moon* and all the *Starrs*, as a Separate *Constellation* from the *Sun* alone, and attributeth unto them their several Offices to rule by Day, and by Night; for though all the *Starrs* do not attend the *Moon* every Night, yet they do by turns; and therefore she alone is said to rule the Night, be-  
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caus she doth so every Night, more or less: and though, as I said, the common *Æthereal Light* divided from the whole *Globe of Light*, (which was the *Stellant Light*, and wherof the *Planets* and *Starrs* were all made afterward) did make the first Night, as that *Globe of Light* did the first Day; and that *Nocturnal Light* is therefore called *Darknes* Comparatively, which had neither *Moon* nor *Starr* in it, yet in order to *Sensitives*, who need more *Nocturnal Light*, the *Moon* and *Starrs*, or a great part of them, were added in this *Fourth Day*, to rule the *Night*; whereof therefore there is also such an *Additional Expression*, *To rule over the Day, and over the Night, and to divide the Light from the Darknes.* Thus also more specially there are said to be *Courses* of the *Starrs*, and many of their *Constellations* particularly named, and their *Cooperations* denoted, *Canst thou bind the sweet Influences of Pleiades, or loest the Bonds of Orion? Canst thou bring forth Mazzaroth in his season? or, Canst thou guide Arcturus with his Sons?* Now whereas some have *Curiously* inquired in what time of the *Year* the *World* was *Created*; which the *Poets* fanly to have been in the *Spring*, becaus that indeed is the time of *Renovation*; and the *Rabbins* in the *Autumn*, becaus then all *Fruits*, and the like, are in their *Perfection*, as they were first *Created*; certainly neither of their *Computations* can be true of the very first *Creation* in the *Beginning*, for then there was no *Year*, nor any *Commencement* thereof; but only *Day* and *Night* generally in the three first *Days*; and in the *Fourth Day*, the *Planets* were made for *Days*, and for *Years*; and then they must also calculate their *Computation* for the *Meridian of Paradise*; otherwise, when it was *Spring* in one part of the *Earth*, it was *Autumn* in the other; as it is now to us and our *Antipodes*. But such is our *Human Vanity*, that we will *Curiously* pry into those things, which *God* hath thought fitt to *Concele*, and yet not acquiesce in those things, which he hath pleased to *Revele*.

II. In the *History* of the *Creation* of the *Planets* and *Starrs* it is farther said of them, that *God sett them in the Firmament of Heaven to give Light upon the Earth.* Wherefore certainly they are all *Lucid*, not only as all *Æther* is in itself, but so as to give *Light* upon the *Earth*, otherwise they could not so give *Light* upon it; and so certainly the *Earth* is not *Lucid* in itself, otherwise



wife it should not need to be Illuminated by these Heavenly Luminarys. Thus as the Apostle saith, *There are Bodys Celestial, and Bodys Terrestrial; but the Glory of the Celestial is one, and the Glory of the Terrestrial is another*; and so neither are the Planets any Magnets, nor the Earth a Planet, but, as several Elementary Natures, they differ Generically, and have their several Generical Glorys, that is, their different Goodness described and expressed in the History of their Creation, severally in several Days: and which also evidently appeareth in Nature, as may satisfy any, except such who being confounded in their own Understandings can also confound Heaven and Earth, which differ farr more and otherwise then the Æther and Planets differ one from another; for they are Bodys Terrestrial, and Bodys Celestial, whereas these are all Generically Bodys Celestial, though they also Specifically differ one from another in Glory: And of all these Celestial Bodys the Sun is incomparably most Glorious; who, as I observed, alone is opposed to the Moon and all the Starrs, and also preferred before them all; for they with his Solar Illustrations and Secondary Light only make Night in the backside of the Earth, which is but as the Shadow of his Diurnal Presence, and therefore is still called, Darknes: and so he is said to rule by Day, and they to rule by Night. Whose darting Rays penetrate through all the Spectable World, and are bounded only by the two common Bounds of Nature, Superæther, and Earth; and in all the Elementary World there is *Nihil simile, aut secundum*. Wherefore Heathen generally worshiped him as a God, who yet in the Scale of Nature is farr Inferior to the Vegetative Deitys of *Egypt*: but they who place him in the Center of the World, and fasten him to it, though otherwise they almost Idolise him, yet heerby they even deprive him of that true Glory which God and Scripture ascribe unto him: and therefore, as I promised, and becaus it is so pertinacious a Controversy, I shall now again prove the Earth, not to Move about the Sun, but the Sun and Æther about the Earth; and that the Glory of the Celestial Bodys is to Move about the Terrestrial, and to bestow their Influences upon them, and of the Terrestrial to Rest, and receiv all their Benefits. Thus the Text saith expressly, God made the Luminarys to give Light upon the Earth, whereby they Rule Day and Night, and  
all

all the Seasons; and therefore they are called Ordinances of Heaven, and not of the Earth; as God saith, *Knowest thou the Ordinances of Heaven? Canst thou sett the Dominion therof on the Earth?* Now where the Rule and Dominion is, there is also the Motion and Action, whereby it is exercised; and so thereby the Planets are said to divide the Light from the Darknes, which the Earth should rather do, if it did Move about the Sun, and the Sun should only minister, and as it were hold a Candle to the Earth Moving about it: and it is also said in the First Day, that God himself so divided the Light from the Darknes before Sun or Moon were made, and thereby made Day and Night: and as the Sun doth now divide the Diurnal Light from the Nocturnal Darknes by his Light, so doth the Moon divide the Nocturnal Darknes from the Diurnal Light by her Light, and so she was made to rule the Night, as well as the Sun to rule the Day; which certainly she doth by her Motion about the Earth, and therefore so doth also the Sun by his Motion about the Earth: wherefore *Jeshua*, who was the Disciple and next Successor of our Divine Philosopher *Moses*, saith *Sun stand thou still upon Gibeon, and thou Moon in the vally of Ajalon*. Which conjunction of Sun and Moon had been very incongruous, if the Sun did not Move as well as the Moon Diurnally, as he doth also Annually, and she Menstrually; but *Jeshua* should rather have said, Earth and Moon stand still, or only Sun stand thou still; for so he had spoke either properly and truly, or Popularly, as they term it, that is, falsely: whereas it is most absurd to conceive him to speak both properly and Popularly, truly and falsely, at the same time, and in the same words. And whereas they say this was only Popular speaking, they thereby do acknowledge that Mankind was antiently of this Opinion before *Pythagoras*, *Leucippus*, and other Græcian Wits fancied the contrary, and therefore propounded it as their Novell Invention; though I am not satisfied that they affirmed any more then the Diurnal Motion of the Earth about its own Center, to save, as they supposed, the vast Æther so great a labor; but I conceive that they allowed the Sun also to Move Annually, as well as the Moon Menstrually: whereas our new Philosophers (whose Inventions are only Additions, and their Additions some greater Absurditys) will Move the Earth, not only Diurnally, but also Annually; which is both

cont.



contrary to Reason and Sens, as I shall shew heerafter, and also most contradictory to Scripture, the Authority wherof no Christian should condemn, much less oppose; and that saith expressly, *The Sun stood still, and the Moon staid*: and though it is true, that the Sun doth not Move Diurnally by his own Planetary Virtue, as he doth about his *Axix*, and Annually; but is carried about by the Diurnal Motion of the *Æther*, which so Moves by its own Planetary Virtue, as I have shewed; yet even so the Sun Moves together with the *Æther* Diurnally; for Motion being, as I said, only a Transition from Place to Place, though the Sun doth not so change his Place in the *Æther* by the Diurnal Motion thereof, yet he doth in and with the *Æther* thereby change his Place in the whole Body of the World, and consequently Move; as Rare Bodys do Move Locally in ascending upward, though they are Moved Virtually by the elevation of more Dens Bodys, as I have shewed: and so also the Sun, and Moon, and Starrs, and *Æther* itself, staid in all their Motions, according to the Context: *So the Sun stood still in the midst of Heaven, and hasted not to go down about a whole Day*; whereby, as *Siracides* interpreteth it, *One Day was as long as two*: and afterward the whole *Chorus* of Heaven proceeded to Move again according to all the several Motions thereof, as it did before: and certainly the other is *Maledicta expositio qua corrumpit Textum*, and destroyeth the very Literal meaning of such an Historical and Memorable Matter of Fact: and though I hope such Interpreters of Scripture may be true Believers of Matters of Faith; yet the wild Liberty of such Interpretations doth so farr render Scripture no Scripture, by an acknowledgment only of the Letter, which they dare not deny, and yet by denying the Sens, which they will not admitt. Wherefore plainly I will proceed to deal with them as I would with Heathen, or any others, that is, by Reason and Sens: Now, whereas they affirm three Motions of the Earth, I will accordingly examine them, and first clearly explain them, because I doubt they are not sufficiently understood; nor indeed the very Doctrine of Motion generally; which some make only to be Remotion or Distancing of one Body from another, and so confound the Motion of one Body with the Rest of others, as I formerly observed; and others confound opposite Motions from East to West, and from West to East; and generally all confound Locomotive Action

on and Passion, which are very different, that is, one a Moving, and the other a being Moved, as I said, the Sun Moveth Actively in his Annual Motion, and Passively in his Diurnal Motion; and though both these be only Motions or Transitions in themselves, yet clearly one is an Active Motion, and the other a Passive Motion; which though they may not differ as Motions, yet do so differ as they are Active or Passive; and as they confound Motions, so also the Terms of Barocenter and Center, and Poles, *Axis*, and *Aequator*, and the like, as I have shewed, which are Equivocal Names according to the several Natures of the Things wherof they are expressed; for so they may be either only Mathematical, as all these may be painted and described on any Globe of Wood, or Stone, or the like, Indifferently, because there are no such things Physically in the Bodys thereof; or also Physical, either in Terrestrial Bodys, as Magnets, wherein the Magnetical Virtue doth causeth them all to be Physically to fix the Magnetical Body accordingly in one determinate Polar Position; or in Celestial Bodys, as Planets, wherein the Planetary Virtue doth causeth them also to be Physically to Move the Planetary Body accordingly in such a determinate Course, as I have formerly shewed, and shall now upon this occasion clearly discover; whereby we may no longer confound ourselves with such confused Notions concerning things which are so different and distinct in their own Natures, and whereby the Truth itself shall evidently appear. And I shall make the Body of any man himself to be the Diagramm, and suppose him to throw a Bowl from him, certainly while the Bowl Moveth from him he doth not Move from the Bowl, because he standeth still in the same place and at the same distance from the Jack or mark, toward which the Bowl runneth, and which doth not stay in the same place where it was, and so certainly if the Sun Move about the Earth, the Earth doth not Move about it. Again, I will suppose his Right hand to be East, and his Left West, and his Face before, and his Back Behind; and so let him throw the Bowl with his Right hand forward, or before his Face, toward his Left hand; this, as I have supposed, is as a Motion from East to West: but if he be an *Ehud*, or *Scavola*, let him throw the Bowl with his Left hand forward, or before his Face, toward his Right hand, and then this, as I have supposed, will be Motion from West to East, which certainly is an opposite



Motion to the other; for so if two several Bowls were thrown at the same time by two several men, as before, in the same Line, they would meet and oppose one another: but if the first Right-handed man, after he had thrown the Bowl from his Right hand before his Face to his Left hand, should with his Left hand proceed to throw it behind his Back to his Right hand again; though this be from Left to Right, yet it is still from East to West, and not opposite to the former Motion; because that was before the Face, and this is behind the Back, and so only a continuation of the former Motion, and the Circle that it describes: and if two several men should in the same Line so throw one Bowl before his Face to his Left hand, and another behind his Back to his Right hand, yet they should never meet, nor oppose, but follow one another: and so the Sun Moveth about the Earth from East to West, and not from West to East, but Diurnally. But now we will also suppose the Earth Moving about the Sun to be as the Bowl, or a Globe, and to have correspondent Points described on it, wherof the East shall be *India*, the West *Spain*, the Forepart *Athiopia*, and the Backpart *Guiana*, according to such their Position and Illumination by the Sun, which as we supposed before, to be as the Bowl, so now we will suppose to be as the Body; and we all know, and agree, that the Earth is Daily Illuminated in *India* before it is Illuminated in *Athiopia*, and in *Athiopia* before *Spain*, and in *Spain* before *Guiana*, and so from East to West: wherefore *India*, or the East part of the Earth, being next to the Sun, whereby it may be Illuminated, we must also suppose the Sun Illuminating it to be West, because it is opposite to it; and then the Earth being in the same Position in itself (as certainly it must be, whether it Move about the Sun, or the Sun about it) that is, having *Athiopia* as its forepart, and *Guiana* its Backpart, as before, and without any Inversion of the Poles, or making *Athiopia*, which was the Forepart, to be the Backpart, and *Guiana*, which was the Backpart, to be the Forepart, it must Move itself Diurnally from West to East, that is from a West Point of the *Ubi* of the Sun toward an East Point thereof, whereby *Athiopia* being the Forepart must be next Illuminated, as before, and not *Guiana*. Thus also in the Annual Motion of the Sun about the Earth, it Moves in the Zodiak from *Aries* to *Cancer*, and from *Cancer* to *Libra*, and from *Libra* to *Capricorn*; or from

from West to East, that is, from *Spain*, or the West Point of the Earth, toward the East, by *Ethiopia*; and not by *Guiana*, which is from East to West, as I have shewed: Now, if we suppose the Earth, as the Bowl, to Move about the Sun, as the Body Annually, and the Sun to be in the Center, and the Earth in the Zodiac, keeping the same Position as before, that is, having *Ethiopia* as the Forepart, and *Guiana* as the Backpart, we must suppose an East Point in the *Ubi* of the Sun, opposite to *Spain*, or the West Point in the Earth, and then the Earth must Move from that East Point to the West, whereby *Ethiopia* may be next opposite to the Sun, and not *Guiana*; for as East is Relatively opposite to West, and West to East, so the Correspondent Points of the Sun and Earth must be Relatively East and West, and opposite one to another; and so consequently must their Motions be Relatively opposite: and however we may call East West, or West East, or that which is Relatively East in respect of one Body, may be West in respect of another, yet in the same respect it cannot be both East and West; nor the same Motion in the same respect both from East to West, and from West to East; but as such, they must necessarily be different and opposite. Thus by fixing fower such Correspondent Points in the Body or *Ubi* of a Globe or Circle, we may fix our apprehensions of the Position, or Motion therot. And though thus farr I acknowledg that the *Phænomena* generally may be solved, if either we should suppose the Sun to Move about the Earth from West to East, or the Earth about the Sun from East to West Diurnally, supposing also *Ethiopia* to be the Backpart, and *Guiana* to be Forepart, which are as different and opposite Positions one way, as East and West are the other way; yet certainly the particular *Phænomenon* of that Position cannot be solved both ways, becaus it is only one way, and not the other: for though we may call the Forepart the Backpart, or the Backpart the Forepart, or they may be so in other Relative respects, (which plainly proves Place to be such a Relative Position, as I have shewed) yet they cannot be so in one and the same respect: wheras certainly the Real Position of each of the Bodys of the Sun and Earth, whatsoever it be, is one and the same, and not different and opposite to itself; but the Position of one is Relatively different and opposite to the Position of the other: and so consequently are there Motions. Thus also I



grant, that though the Sun, which, I say, Moves from West to East Annually about the Earth, should Really Move about it from East to West without any supposed variation of the Position thereof, whereby the Sun, proceeding from *Libra* to *Cancer*, should first Illuminate *India*, or the East, and next *Aethiopia*, or the Forepart, and not *Guiana*, or the Backpart, yet the *Phænomena* generally might be thereby solved, and there should be the like *Equinoxes*, *Solstices*, and all other intermediate Illuminations, throughout the Year, in all the Earth; but this particular *Phænomenon* can not be solved thereby; for since we know that *India* is first Illuminated, and *Guiana* next Annually, by the Sun passing from *Spain* to *Aethiopia*, and so to *India* and *Guiana*, *India* cannot be first Illuminated, and *Aethiopia* next; becaus such different and opposite ways of Illumination cannot be without different and opposite Motions of the Illuminator, that is, of the Sun about the Earth; and such different and opposite Motions cannot be at the same time in the same Body of the Sun, and in the same Relative respect to the Body of the Earth. And so it may be, though we suppose the Earth to Move Annually about the Sun one way or other. Thus whereas it is said, that whether the Sun Move about the Earth, or the Earth about the Sun one way or other, the *Phænomena* will be the same, it is true generally of such as are Relatively the same one way or other, (as it is so in all such Relations) but not of such particular *Phænomena* in themselves Positively, which must be only such as they are, and cannot be otherwise. But this I only premise, and do not insist upon either of these two Motions Diurnal, or Annual; becaus, as we do affirm two Active Motions in the Sun, that is, one about his own *Axis*, and the other in his Zodiak or Circle which he describes, and which is his Annual Motion; and though indeed the other be not his own Diurnal Motion Actively, but the Motion of the *Æther*, yet we cannot deny, that it may be supposed that there are two such Motions in the Earth, which therein may be Annual and Diurnal Actively; and both these Motions must be supposed, becaus though the Sun cannot Illuminate the Globe of the Earth standing still, and only by turning about his own *Axis*, but must be Moved about by the *Æther* Diurnally; nor otherwise then by describing a Circle about it Annually; yet the Globe of the Earth may be Illuminated by the Motion of the Earth

Earth itself about its own Center toward the Sun standing still ; but the great *Criterion*, as I conceive, is, that whereas only two Motions are ascribed to the Sun, and a third to the *Æther*, which is another Body Moving also the Sun in and with itself, whether the Earth alone can have all these three Motions in itself, as it must have to solve the *Phænomenon* of the very Motion thereof. And now I shall first prove this third Motion to be Necessary, and afterward to be both Absurd, and Impossible ; lest having shewed the Absurdity and Impossibility any may afterward deny or doubt the Necessity thereof. And hear again I shall make himself that denieth or doubteth it to be the Diagramm ; and let him place a Terrestrial Globe, how he pleaseth, on one of his hands, supposing it to turn round also of itself about, according to its own *Æquator*, like the supposed Diurnal Motion thereof with either Pole toward his Body, as if the Earth were in *Cancer*, or *Capricorn*, and suppose his Body to be the Sun, and so let him turn his hand with the Globe on it from the Right part of his Body toward the Left, or from East to West, like the supposed Annual Motion of the Earth in the Zodiac thereof, without any third Motion to Incline the Poles one way or other ; and then the same Pole thereof, which was Inward or next to the Body, or Sun, will still be so, and it will not be varied by either of the other two Motions ; and so only that Hemisphere, whether *Arctike*, or *Antarctike*, should be Illuminated, both Diurnally, and Annually, and not the other at any time, which is manifestly false : wherefore to solve this there must Necessarily be a third Motion supposed to Incline it, which I shall therefore call *Inclinatory* ; and which he may also add to the other two, by turning the Pole that is toward his Body with his other hand, (while he turneth the Globe, as before, from Right to Left, or from East to West,) equally the other way, that is, from Left to Right, or from West to East, according to the Meridian of the Globe ; which though the same way from West to East, is another Motion, Annually, and not Diurnally ; nor according to the *Æquator* thereof, like the supposed Diurnal Motion, and opposite to the Annual Motion ; and by this third *Inclinatory* Motion the other Pole will also be turned toward the Body or Sun, and consequently the other Hemisphere also Illuminated, but without such Inclination the *Phænomena* cannot be solved. And now I shall shew the Absurdity of such a

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supposed



supposed third Motion of the Earth, if it were Possible in Nature. We all agree that the Earth is Magnetical, or that like every Magnet, or *Terrella* it hath two Poles or Polar Points, exactly North and South, without any the least Inclination or Variation in themselves, either toward East, or West; and nothing else can make the Earth, which is the great Magnet so to Incline or vary from the Polarity therof, which is according to its own Natural Position; though less Magnets may be Inclined or varied by greater, or by being fixed in a contrary Position. Now as these two Polar Points must be Correspondent to two such Points in the Body of the Superæther, if that be Immovable, as we suppose, or in the *Uli* therof, in the Position of the Whole, though the Parts may Move round therein; so also to two like Points in the Æther, which, if the *Axis* of the Earth were produced beyond the Poles therof through the Æther to the utmost Circumference of the Globe of the World, it must Intersect, and so Terminate in two such Points in the utmost *Superficies* of the Superæther: though these two Points or Poles of the Superæther may be only Mathematical; and however some deny that there are two such Physical Points or Poles of Æther to direct the Motion therof, as I have shewed, yet generally it is conceived that there is some Physical Correspondence between them, and the Poles of the Earth; and therefore some assigne the Influence therof, or of some Northstarr about the North Pole, to be the Cause of the Polarity of the Earth; and others ascribe it to some Northern and Southern Atoms, flowing and reflowing thence forward and backward, I know not how; and every Astronomer tells us that there are such Poles, *Axis*, and *Equator* of the Æther. All which Opinions, whether true or false, presuppose such Poles or Points in the Æther, and that they some way or other Correspond with the Poles of the Earth, which this *Hypothesis* of the Inclinary Motion of the Earth doth deny, and suppose only a Northern and Southern Hemisphere of the Æther, to which the respective Poles in the Earth may point and Correspond in every Part and Point therof, according to such an Inclinary Motion; whereby if an *Axis* were produced beyond the Poles of the Earth to the Æthereal Hemispheres, each Pole so produced would vary through all the sixteen Points or more of each Hemisphere; as a Directory Needle doth, when it is Moved violently

lently from North to South, vary each of the Poles therof through the sixteen Points or more of each side of the Compass: but as the *Terrella* or Needle doth not Naturally so vary in the least maner from the North and South Points, wherein only it resteth, so it is most Absurd to affirm that the whole Magnetical Earth doth so vary, or hath any other Position then exactly North and South: for, as I have before shewed, though the Body of a Magnet may indeed be so varied, and that part which was Northern become Southern, by the Magnetical Virtue removing in it; yet the Magnetical Virtue itself is alway and only Polar, that is, exactly North and South, and cannot be otherwise, for then it should cease to be Magnetical, which must also be Polar Naturally: and the Magnetical Virtue of the great Magnet the Earth is Inalterable by any greater Power in Nature, which might remove it, as appears by the Inclinary Needle, which alway conformably Inclines to the same two Points of the Body of the Earth, which are also the two Poles of the Magnetical Virtue therof. But now I shall prove this Inclinary Motion of the Earth to be Inconsistent with the Diurnal Motion therof, and therefore Impossible: for it is about its own Center according to the Meridian of its own Body, as the other is also about its own Center according to the *Aequator* of its own Body; which two Motions of the same Body at the same time are Inconsistent, and consequently Impossible. I have already shewed how a Body at the same time may Move about its own *Axis* according to the Parts, and also Progressively according to the Whole; as a Cart-wheel Moveth runing down a hill; or any Planet Moving about its own *Axis*, and also Progressively in the Circle that it describes: and so also the Motion therof about its *Axis* may be one way, as from East to West, and the Progressive Motion the other way, as from West to East; as suppose an undershot Wheel runing down a declivie Chanel of Water, which shall also carry it about its own *Axis* one way, while it runs down the other way: and so the handle of a Quern may be Moved Progressively one way, and yet Directed or Inclined about its own *Axis* the other way, or a *Turbo*, or Top, sett up by the Right hand drawing back the *Scutica*, or Slash, wound about it, is turned about its own *Axis* back again from the Left hand to the Right hand; and yet it may be also whip'd Progressively from



from the Right hand to the Left hand: And the *Satellites* about a principal Planet do describe Hemitrochoids, as I may so term them, whereby it most evidently appears, that they are not, nor can they possibly be so Moved by the Spheres, for it is not only by a Circular, but a Progressive Motion; so as if while by the *Axis* a Quernstone were drawn forward Circularly, by the Handle it should be also Moved round about the *Axis*; the Handle would describe such an Hemitrochoid about the *Axis*. Also I grant that three, or more, several Motions may be in the same Body at the same time, by several Movers: as suppose a Ship sailing round, and describing a Circle Zodiacal, like the Annual Motion of the Earth; and a Globe Moving in the Ship about its own *Axis* according to the *Aquator* therof, like the Diurnal Motion of the Earth; and a Fly Moving upon the Globe according to the Meridian therof, like the Inclinary Motion therof; the Fly doth not only so Move upon the Globe, but is also Moved by the Globe according to the Motion therof, and the Globe, and consequently the Fly, by the Ship according to the Motion therof: and so there may be in the same Body at the same time as many several Motions as you pleas; for the Body doth not Move itself Actively according to all these Motions, but is also Moved Passively by others; which is as great a difference, as there is between Action and Passion, as I have shewed. Now, though I grant, that there may be an Active Motion of the Body itself according to the Parts about its own *Axis*, and according to the Whole Progressively, either in a Direct, or Circular Progression, yet I deny that the same Body at the same time can Actively Move itself any more then these two several ways; as that while it Moves about its Center one way, it can also Move about its Center any other way, or that while it Moves Progressively, according to any Line, Direct, or Circular, one way, it can Move Progressively according to any other Line another way: which plainly is as Impossible, as that the same Body at the same time should be in several Places; for so indeed it must be, either according to the Parts, if it could so Move about its Center, for then the same Part must be in or upon several Points at the same time; or according to the Whole, if it could so Move Progressively; for then the Whole must be in or upon several Lines at the same time: and it may be tried by a round Bullet of Iron

or

or Lead marked with the two Poles, and an *Aequator*, and Meridian, and then place it on a declive Bord on either of the Poles, and it will run round according to the Meridian, from Pole to Pole; by the Gravity therof; but if by the Prepotence of your hand you sett it up like a Top according to the *Aequator*, with one Pole on the Bord, as before, yet it will not run round, as before, according to the Meridian from Pole to Pole, but slide down turning round according to the *Aequator* only upon that one Pole, becaus it cannot Move both ways at the same time, though it doth Move about its *Axis* according to the *Aequator* by the Impressed Motion, and Progressively downward by the Gravity at the same time; but as it cannot then Possibly Move Progressively any other way then downward, or in or upon any other Line at the same time then as it doth then Move: so neither can it Move about its *Axis* any other then one and the same way that it doth Move at the same time. And so, as I have shewed, though there may be supposed a Diurnal Motion of the Earth about its own Center according to the *Aequator*, and an Annual Motion Progressively in the Zodiac or Circle that it describes, yet there cannot also be a third Inclinary Motion about the Center according to the Meridian; becaus there cannot be two Motions about several *Axes* therof according to the Meridian and *Aequator*, or about the Center of itself, as I said: especially since the Diurnal Motion of the Earth must be about the *Axis* according to the *Aequator*, and the Inclinary about the Center according to the Meridian, not only thus severally, but one Diurnally, and the other Annually, as I have said; (whereby it should Move both slower and faster about its own Center at the same time, which is Impossible, otherwise then by an Epicyclicous Motion, &c. I shewed in a Quern) and that this is an *Amechanon*, I appeal to any Mechanike, or to any who shall Mechanically try, to make a Terrestrial Globe so to Move the three several supposed ways, or indeed any two several ways about any two several *Axes* of its own Body at the same time (as certainly none can Move by two several Progressive Motions at the same time) without several Movers, as is aforesaid: so that though all the Relative *Phanomena* of *Aether* or Earth may be solved by the Motion of either of them, yet the three supposed Motions of the Earth itself cannot be solved: wheras the Motion of the Sun about his *Axis*, and also Progressively



sively in the Zodiak Annually, and his being Moved and carried about Diurnally by the *Æther*, which is another Mover; and so of *Venus* and *Mercury* Moving about him, as any other *Satellites* about other Planets, Progressively, and being also Moved and carried about Diurnally with him by the *Æther*, are easily solved *Primo Intuitu*, and according to the plainness and facility of Nature, without such Inconceivable, and Impossible, Inclining, and Distorting of the Earth or their Brains, as others have vainly done, and can never approve, unless they also find out some other Mover to carry about the Earth, as the *Æther* doth the Sun; which certainly may not be the *Æther*, because they affirm it to be Immoveable; nor the Air, nor Water, which have no such Diurnal Motions themselves. Wherefore though Scripture, and the Verdict of all Mankind generally besides themselves, were sufficient to turn the Balance and determin against such an *Hypothesis*, wherof they can never be satisfied, that it is so, but only suppose that it may be so; yet considering that I have to deal with such Empirical Philosophers, who make Sense alone to be both their Text and Topicks, I have doubly and thus largely proved it against them that it is not, nor cannot be so; and though this last Ratiocination be also a Sensation, or a Mathematical and Mechanical Demonstration, yet I shall add one Sensible Experiment more, which is agreed by all, and that is the Motion of the Sun about its own *Axis* by his own Planetary Power; whereby it plainly appears to be Actively Motive in itself, and as a Wheel that may be Moved round by another Passively, may by the same Passive Motion be also Moved Progressively, (and so all Coaches and Carts are Moved or drawn by Beasts) so the Sun may, and doth, by the same Planetary Virtue, whereby he Moveth himself about his *Axis*, Move also Progressively in the Zodiak (though not in like manner, or by such proportionable Circumvolutions) by his own Motive Power, which apparently he hath in himself: and so the Moon also Moveth about the Earth, and the *Satellites* about a principal Planet, and other Planets about the Sun; which plainly shews that these *Ætheruli* are Motive, and so indeed are all the rest, and *Æther* itself; whereas Magnets, or *Terrella*, as I have shewed, though they have Verticity, yet cannot thereby Move once round about their Center, nor at all about their Magnetical *Axes*; and though they have a Magnetical Concurfion, yet one of them cannot

cannot thereby Move once round about the other, by the Magnetical Virtue of one or both of them. Wherefore the Earth is only a Magnēt, which cannot Move round by its own Magnetical Virtue, and the Æther, and *Ætheruli*, Planets, which do so Move round by such several Motions perpetually : and therefore we ought to ascribe these Motions to Æther, and not to Earth ; because the Motion of either may solv the *Phænomena* ; and most Sensibly and confessedly the *Ætheruli* are so Motive, and the *Terrella* are not ; and so the Motion of the Æther and *Ætheruli* doth sufficiently solv them without any Motion of the Earth : and whereas others would therefore ascribe Motion to the Earth, because the Motion of that alone may suffice without the several Motions of all the Æther, and so many *Ætheruli*, they plainly contradict the Text (which saith, *God sett them in the Firmament of Heaven to give Light upon the Earth*, (that is, that both the Firmament of Heaven, and all the Luminarys therein, thus by Moving about this one Terraqueous Globe, might give Light upon it by their Rays passing through the Diaphanous Air unto it, as so many Lines from the Circumference to the Center) and also the Reason of their very Nature, which is most Motive of all the Elementary Bodys, and likewise Sens itself, which discovers them to be Mobile. Others suppose the Earth should be more Mobile, because it is less then most of the Luminarys, (which I believ was the first occasion of this Error) but they consider not also, that it hath the least Motive Virtue, which in the Æthereal Bodys is more proportionable to their Bulk ; and so the Sun is fitly compared to a *Strong man*, or Giant, *running his Race*, which he can do more swiftly then the Dull and Dwarfish Earth. But their grand Argument, and that which they esteem their most beautifull *Helena*, (though it be as fall and adulterine) is the Orderly and Circumferential Situation of the Planets in their Spheres about the Sun as the Center ; wherof they make the Earth to be one : but heer again the Moon doth break the *Chorus* ; because she Moves about the Earth, and not about the Sun, as the rest, and so the Sun with them also about the Earth ; and therefore it is said, that God made these two great Lights, to rule the Day and Night upon the Earth (as they principally so Move about the Earth, and all others about the Sun) and they ; and all the others, were sett by him in such Positions, and to run such Courses, whereby they might be most



serviceable to the Earth : nor are there any such several Spheres in the Æther, as I have shewed ; but the true Spheres of the Elementary Globe are most Orderly and Circumferentially situated about the Terraqueous Globe, as the Center of them all ; without any Eccentricitys, Epicyclitics, Hemitrochoids, or the like : and so the Air doth encompass it, and the Æther the Air, and the Superæther the Æther : and thus Spheres properly and most conformably relate to their inmost Orb, and not all, or any one Orb in the Æther to the Orb of the Earth : for so one Orb doth not relate unto another, nor can Convex Orbs so comply, as Concave Spheres, with any Orb ; nor can they otherwise be Centers either of Gravity, or Extension, one to another ; becaus there can be but one Center to which all *Gravia* do tend, as I have shewed ; and Orbs applied one to another make the greatest Chasms between them in their Extension. And thus there is the greatest Conformity both of the Situation of the Elementary Bodys, according to their more or less Density, downward ; and of the Elementary Spirits therin, according to their more or less Activity, upward ; whereas if the Sun should be supposed to be, or have, the Center of the World in himself, he must also be supposed to be the most Dens and Dull of all Elementary Bodys, who is the most Glorious and Active of all Elementary Operators : and as he, and the Moon, so also all the Starrs, were made to divide the Day from the Night, and to be for Signs, and for Seasons, and for Days, and for Years, which is accordingly performed by their due and determinate Situations ; which however they may appear unto us, yet by their very various Positions, yea their Eccentricitys, and the like, they do so produce those varietys of Seasons, and their *Annos Saturni, Jovis*, and others ; and observ such Orderly Courses, as if we did rightly understand them, we should easily conceiv, and confess, that it would be a great Monstrosity in any of them to be placed otherwise. Thus the Sun, who doth chiefly excell, and exceed, all the others in the two principal Æthereal Qualitys, Heat, and Light, is seated at such a distance, as doth best afford to the Terraqueous Globe a fitt Temperature therof, and doth Move and is Moved in such Courses, whereby, though he be but one Luminary, yet his Heat is so distributed and communicated to all the Globe, that there is no Zone Inhabitable, as was antiently supposed ; and so also his  
Light

Light in all the Parallels therof, that in the whole Year, though not every Day, one hath as much of his Principal Light as another; and they which are farthest from the *Aequator*, and neerer to the Pole, are also recompensed with more of his Secondary Light, and have longer *Crepuscula*.

III. God made two great Lights, the greater Light to rule the Day, and the lesser Light to rule the Night: that is, the Sun to rule the Day, and the Moon to rule the Night: and whereas they are said to be great Lights, that is no such Popular Expression as some would have it; for as it is said, so indeed they are great Positively, though not greater Comparatively then all the others, or so as the Sun is said to be greater then the Moon, nor are they termed great Starrs, but great Lights, or Luminarys; and so indeed they are greater then any others: and this is the very sense and meaning of the Expression, according to the Subject Matter, which is immediately subjoined, *the greater Light to rule the Day, and the lesser Light to Rule the Night*: and as they were all made to give Light upon the Earth, so certainly these two give most Light upon it, the Sun by Day, and the Moon by Night; and to stop the mouths of all such Cavillers, it is Originaly, not the Greater and Lesser Lights, but the Great Light and the Little Light; and so indeed they are: and as they are specially named, so their special differences from the rest are very considerable; not only of the Sun, which are sufficiently noted and acknowledged, but also of the Moon; as her not Moving about her *Ax*, her Epicyclicitys, *Apogaea*, and the like: and though the Sun is the Illuminator of them all, yet he ruleth Day alone by his own Diurnal Light; whereas the Starrs attend and assist the Moon in their Courses and Orders while she ruleth the Night by the Conjunction of their Nocturnal Light: but that which is most notable, is her Moving so often Immediately and only about the Earth, and never about the Sun also, like others; and it being the very End of the Creation of all the Luminarys to give Light upon the Earth, this shews her to be another Principal Planet in that respect, which is the chief End of them all, as well as the Sun; and so indeed the Sun and Moon do cause more Variations, and greater Effects in the Earth, then all the Planets and Starrs besides; yet as I deny the Earth to be a Planet, so I do not conceive that the Moon is any



more a *Satelles*, or *Appendix*, of the Earth, then the Sun; though she doth Move about it, as the *Satellites* seem to do about their principal Planets; which is not by any Magnetical Emanations of the principal Planets so carrying them about, but by their own Planetary Virtues so Moving themselves; nor do they Really Move about them Circularly as they should, if they were so Moved by them, but by such Hemitrochoids which they describe, as I have shewed, while the principal Planet Moves in a Line cutting the Perpendicular thereof in the midst between the *Basis* and the *Zenith*; whereby they are sometimes below them, and sometimes above them, and sometimes on the one side, and sometimes on the other, and so may seem to Move Circularly: which is no Magnetical Motion, as I shall now shew; and yet they who can solv the *Phænomena* by affirming whatsoever they pleas, will join not only three Elements, which are the very true and real Dividers and Sharers of the whole Elementary Globe, according to their very different Natures, Spirits, and Spiritual Qualitys, and also more or less Densities of their severall Bodys, (which are farr more evident and consyderable Distinctions and Heterogeneitys then any greater or less Quantity of Matter, which as such is always Homogeneous) but also the Moon itself, which is a consyderable part of the fourth Element, *Æther*, into one Magnetical Correspondence and Combination: Wherefore, as I have proved that the Earth is no Planet, or Moon; so I will now also prove that the Moon is no Magnet; or Earth: and this I hope may also serv to disprove any such supposition of any of the other Planets, which are of the same *Æthereal* nature with the Moon, and as different from the Earth. Certainly we thus read that the Earth and all the Elements were made and perfected before any Planets or Starrs; which afterward in this Fourth Day were made to give Light upon the Earth, and not the Earth upon them, or any of them; and God placed them all in their severall Positions about their Centrical Orb, the Earth, and the other Elementary Spheres about it, before there were any Positions or Motions of the Planets; and he made Dry Land and Seas in the Terraqueous Globe, but not in the Moon, or any of them; and so the Earth, and Waters, and not they, brought forth Grass, Herbs, and Fishes, and Fowls, and Beasts. And though Superather, and Angels, be farther removed from us then the *Æther*, and *Aetherni*; yet we have

have some Consuſance of them, and ſome Communion with them, declared in Scripture; but not of any Inhabitants, or ſuch other things in the Moon, or any other Planets: ſo that if we will yet oppoſe *Ipſe Dixit* to *Deus Creavit*, we muſt ſay, that not God, but Man, made this World in the Moon: and they who can ſo Create in it Earth, and Seas, ought alſo to make therein Vegetatives, yea Sensitive, and Intellective Inhabitants: for ſince we hear on Earth, where God hath founded his Troop, and made his Plantation both of Vegetatives, and *Animals*, have no Uſe nor Inſpection thereof, it muſt conformably have its own proper Inhabitants to uſe and enjoy it, otherwiſe it ſhould be ſo made in vain. Again, the Moon cannot be any ſuch Magnet as the Earth, which appears plainly by her Motions ſo often about the Earth, without Moving once about her own *Axis*, for ſuch are not Magnetical, nor in any reſpect like unto the Motion of any *Terrella* about the Earth, or Needle about a *Terrella*, which maketh two Revolutions about its own *Axis*, while it Moveth once round about the other, (like one Wheel with Teeth ſo Moving about another) whereby alſo the South Pole thereof doth alway comply with the North Pole of the other, and the North Pole with the South Pole of the other, and ſo all the other Intermediate Points: and if we ſay that the Moon hath any other Magnetical Virtue different from that of the Earth, which doth ſo regulate her own Motions, I grant that both the Moon and all the others, have ſuch proper Specificall Virtues, as I have ſhewed, and which I Generically call Planetary; and though others may more Generically call them all Magnetical, yet I muſt affirm them Subalternately to differ, as I have ſaid, and ſhewed that the Poles, *Axis*, and *Aequator*, of *Aether* do from them in the Earth, though they be both ſo Denominated Equivocally. Alſo it is Senſibly evident that the Moon is not an Earth, nor the Earth a Moon; becauſe the Moon is Luminous, but the Earth Opaque, though very much Illuſtrated by the Sun; which becauſe it is denied, and will alſo concern all the other Starrs, therefore I more willingly undertake to prove it; though it be only a Superſtition of the former Error. It is expreſſly ſaid, that *God made two great Lights*, that is, the Sun, and the Moon: wherefore the Moon is a Light or Luminary as well as the Sun; and greater or leſs Light doth not deny, but affirm, the leſs to be a Light as well as the greater: and



and so they are both termed Synonymously and Univocally *Luminaria*; and not the Sun *Luminare*, and the Moon *Speculare*, as some men would make her to be: and so it is said generally of them and of all the other Planets, and Starrs, *Let there be Lights in the Firmament of Heaven*; and so indeed is the whole *Æther* both Calid and Luminous, though yet less then the Moon or Starrs, becaus Heat and Light are the common *Æthereal* Qualitys, though there may be farr more in one *Æthereal* Body then another, becaus their *Composita* are Specifically different; but as they are all more Generically *Æthereal*, so they must all have their Generical Qualitys, without which they should not be Generically what they are; as well as all Vegetatives, and Sensitives, though they differ Specifically one from another in their Simple Substances, and so have their Specifically different Spirits, and Spiritual Qualitys, yet must also have such as are Generically Vegetative and Sensitive; otherwise they should not be what they are, Vegetatives, or Sensitives: and thus indeed they make the Moon to be a *Terrella*, and not *Æthereal*; which they may as well affirm of the Sun, and all the *Ætheriali*, and *Æther* itself, and so make it to be no *Æther*. And wheras we Sensibly see the Moon to shine, the Question is, whether she shine by her own Light, or only by the Solar Rays Reflected from the Earth, whereby the Earth should give Light upon her? which I have before refuted: nor can it be so according to Optike Law, if we consyder the very great distance between the Earth and Moon: for though Direct Rays pass from the Center Circumferentialy to the utmost Sphere of their Activity, as the Solar Rays so Illuminate the Earth, and the whole opposite Hemisphere; yet Reflex Rays are much shorter, though very Vivid and quick, becaus they are so Reduplicated and Conspissated, like the Horns of a Snail when they are touched; and they are proportionably stronger as they are neerer to the Reflecting Angle or Point; as we see a Candle much farther by the Direct Rays then any Object Illuminated thereby by the Reflex Rays therof, and the neerer we are to the Object, we see it better. And so, though it is said, that the Pike of *Teneriff* may be seen at the distance of two or three Degrees (as any Eminences of the Earth may be seen so farr as a Line drawn from the Summit therof will be Tangent upon the Globe of the Earth, and perhaps somewhat farther by

by the advantage of Refraction, which may suffice to render an Object Visible about such a distance as three Degrees); yet at the first Degree it will be seen very Dull and Obtuse; and much more at the Second; and he that can see it at the third, *Aut videt, aut vidisse putat*, — though he look upon it at Sunrising or setting, when the Rays are most Directly Reflected, or with a Telescope, (which doth Magnify rather than Prolong the Reflected Rays); or though the Object be of the greatest Magnitude, as the *Alps*, or *Apennine*, or Rock of *Lisbon*, and the like; which yet will never be seen very Lucid or Colorate, but Confused like a Cloud, or Fume; (yea, though it be Specular) at so great a distance: whereas plainly we see the *Moon walking in Brightnes*, as it is said of her, with our naked Ey, yea, her very Figure and Spotts. Nor is it only by Reflection of the Solar Rays from the Moon herself, though that be neerer to the Truth, being only by a single Reflection, whereas the other must be double, first from the Earth to the Moon, and then from the Moon back again to us on the Earth; wherefore to find out the Mystery of so clear a *Phenomenon*, we must consider the Moon in her own Native Light, which is so great in herself, that thereby she is also Visible unto us, in an Eclipse, in her whole Disk, and that part of her Disk, which is not Illustrated by the Sun, is Visible sometimes, or with some advantages: and whereas this Visibility is imputed to the Secondary Light of the Sun, I have shewed that an Object cannot be so farr seen by his Principal Light Reflected, and much less by any Secondary Light. Wherefore certainly she hath some Light in herself, and such as is farr greater then the common Light of *Æther*; because she may be so seen thereby in the *Æther*; and yet this Light is farr less Lucid or Visible then when and where she is Illustrated by the Principal Solar Light: which to explain, we must consider, that she also is *Æthereal* and Connatural with the Sun; and so was made one of those *Luminaries*, which were Created in the Firmament of Heaven, and sett there to give Light upon the Earth, not only generally, as all the rest of the vulgar Starrs, but more specially and principally, as she is so called the *Queen of Heaven*: and so we must conceive that they all had not only their own Native Light produced in themselves, but also adapted so as to Colluminate together, and give Light upon the Earth, as it is so said of them all together,



as well as particularly of the Sun, to rule the Day, and of the Moon to rule the Night: and thus they were made one general Constellation, or Host of Heaven, wherof the Sun, who was made to rule the Day (which is called Light, and in respect wherof the Night and all the Nocturnal Light is Comparatively termed Darknes, not only as they were so Divided and Denominated in the First Day, before there were any Moon or Starrs to rule the Night, but now also again in this Fourth Day, wherin the Luminarys were made to rule over the Day, and over the Night, and to divide the Light from the Darknes) was made also to be Fountain of Light, generally as the Ocean, and the rest as Rivers or Streams of Light; and as all the Luminarys, and Constellations, have their Influences, so every other Planet, and Starr, and the whole Æther, had their own Native Light more or less Actually produced in themselves; and likewise an aptitude or Potentiality of production of a greater Lucidity and Emanation therof, as well as of their Influences, by the Sun, whereby they also might give Light upon the Earth. And thus, as I have observed, Univocal Generators do most Effectually Generate and produce, as Heat is so said to draw forth Heat; and particularly Colors, which are composed, as I said, of Lucidity and Opacity, though they be Inherent in the Colorate Bodys, wherin they are so Mist, and do Sublist; yet being so Mist with Opacity, their Lucidity is thereby also so Imprisoned or fixed and confined to the Colorate Body, that it is only Actually Inherent therin, and cannot issue forth in Emanant Rays, whereby it becomes Visible unto us, until it be Evoked, Excited, and Assisted, by the External Light: and the more Lucid the Color is, as White, and the like, the more it is so produced; as Whites are best Marks at a distance, and a White Horse a better Mark or Guide in a dark Night then a Black; and the more Light or Rays therof are cast upon any Colorate Object, the more are the Visible Species therof produced; whereas Culinary Lucid Bodys, which of themselves do Emitt their own Rays, are not Assisted, but rather have their Visibility Obscured by External Light; especially if it be greater; as a Candle in the Sun, and so the Starrs and Moon itself above the Horizon before Sun rising, or setting, are not so Visible as afterward, as Water doth quench the flame of an Haystack, which it before Incensed. Wherefore I thus conceive,

conceiv, that the Native Light of the Moon, being not a Cullinary, but an *Æthereal* Light, Inherent in the Moon itself, is like Color, yet farr more Lucid, and so farr more Evoked, Excited, and Assisted, by the Solar Light; as a White Color is thereby rendred more Visible then Black: and that the Inherent Light of the Moon, and External Light of the Sun so concurring by their more Connatural Homogeneitys, do produce and draw forth themselves together to so great a distance, and with so great a Splendor; and though the Sun doth so produce the Inherent Light of the Moon Positively by his Principal Rays, when they are both above the *Horizon*, yet the Moon doth not then appear so Visible and Splendid, becauf Comparatively she is thereby made farr less Visible and Splendid then he is in himself: for certainly this Lucidity cannot be only from Reflection of the Solar Rays, whether we suppose the Moon to be Cortical, having Earth and Seas, like the Terraqueous Globe, which Sensibly doth not Reflect very farr; or specular, which may Reflect farther, becauf the Rays penetrate less and more Splendidly, in a fitt Position to the Ey, being Reflected thereby more equally; but it must be also by some Inherent Light which is in the Moon itself, that is so Collustrated by the Solar Light, and by the Connatural Quality thereof: nor is it to be Imagined that the highest Planets, and Starrs which are at the farthest distance, and yet Emitt such a Splendid and Vivid Light, should so shine only by the Reflection of the Solar Light. Now, though there are Spotts in the midle, and seeming *Gibbi* in the Circumference of the Moon, (which I rather conceiv so to appear by such Interveniēt Spotts therein) yet this may not be from any Concavitys in the Body of the Moon, and the unequal Reflection of the Solar Light thereby; for there are Spotts also in the Sun, whereby his conversion about his *Axis* is noted, and yet he shines by his own Light: but I suppose them to be only less Luminous parts, and such defects of their Native and Inherent Light, as I doubt much, whether they were so Created in this Fourth Day: and though Earth which is a Consistent Body may have such Constant Eminences, and Water some Temporary Waves, yet it hath been observed that as Flame of a Candle, which is somewhat more Rare, is rendred Pyramidal by Compression of the Ambient Air, so if it be defended by another Intermediate Flame, as of Spirit of



Wine Inflamed, or the like, it will Conglobate within that Flame: And whereas *Saturn* is commonly represented Oval, it is said by a very curious Inspector, that indeed he appears so if you behold him through a less Telescope, but if through a larger, you may discern two little *Aetheruli* on each side of him, and very neerly distant from him, which make him so to appear when they are beheld together with him Confusedly and Indistinctly. Though I shall not determine this, or how they might be Compos'd and Constituted by the Divine Creator: certainly all the Planets do not Move in exact Circles, but some of them describe Circles Indented with such Hemitrochoids, as I have shewed: but it shall suffice to have proved that the Moon, and consequently the Starrs have their own Inherent Light as well as the Sun, though perhaps not Emanant without his Collustration; and so plainly they have their several Influences, and every one its own Planetary Virtue Inherent in themselves, which Moves their own Bodies, becaus there are such various and several Motions therof, which therefore must be caused by various and several Motive Virtues. The Moon, as I have said, doth not Move about her own *Axis*, but she doth Move very notably and rapidly in her Zodiac Progressively; and, if we compute that Motion according to all her Revolutions, perhaps as fast as the Sun; which are the two swiftest Movers Progressively. And the Moon, as she is neerest to us, so probably she is least Calid and Lucid; wherefore her chief Influence is observed to be over Moisture; not that she is Moist in herself, which is a Quality of Water; but as the Sun doth by his Heat draw up Vapors, and also Desiccate or Concremate them, whereby they do not presently return again into Water, but turn into Dry Exhalations, Clouds, and Motes, whereas more Moist Vapors and Mists commonly rise when the Sun is sett, and in the colder Night; so the Moon by a more Moderate and Insensible *Tepor* doth draw up more gross Vapors, which presently return into Dews and Water, and chiefly when she is in her *Apogea*, (as I have said formerly of Tides which are then highest) whereby the Vapors are not drawn up so high, but the Water (which, as I have observed, doth Naturally Evaporate, and again return to Water) by her less Heat is less Desiccated and Suspended; and so the Vapors are lower, and sooner return into Water again: for though Internal Heat in the Water  
itself

itself, by Rarefying it, doth help Evaporation, yet any greater External Heat doth reduce the Moisture of the Vapors which it raiseth to Potentiality in Fume, which is prevented by the less Heat of the Moon; and by this, or some other way unknown to us, the Moon doth very notably Predominate over Moisture; And thus, as Heat and Moisture are the chief Instruments in Elementary Generations, wherein Cold serveth to temper Heat, and Drines to fix Moisture, so these two chief Luminarys do most notably Predominate over them, that is, the Sun over Heat, and the Moon over Moisture, as well as the Sun doth rule the Day, and the Moon the Night.

IV. Besides these two there are five other Principal Planets, as they are termed, to distinguish them from the other Starrs, which are contrarily termed Fixed; though heer they are all comprehended under the common Name of Starrs, and so indeed they are in Nature; though men taking more notice of the Planets, as neereſt to us, and most sensible by us, have formerly Deified them, and still dote upon them, and so have assigned them their several Spheres, and only one Eighth Sphere for all the rest, which are Innumerable more; and yet among the Planets themselves there are found out some *Satellites*, and perhaps more may be found out heerafter, though we know them not yet, as others before us did not know these: and whereas men also have fancied such several Regions of *Æthereal* Spheres as are not to be found in Nature, so also such an Orderly and Uniform Position of the *Atheruli* therein, as is indeed contrary to the very End and Intention of these Luminarys, which, as I have shewed, was for the greatest Variety of Seasons and Influences, and that could not be without their various Positions and Motions; which I do rather suppose to be so very various and difform, that like the Motions of Fish, Fowl, and Beasts, nor any one of them is like to any other, but every one most Regular in its kind, as I have observed of Mathematical Figures, that is, the Circle, and all Regular Polygons, which therefore are Asymmetrical; and so are the *Atheruli*, becaus they are all several Specificall Natures, purposely Created to expreſs such Varietys, and Conform in their very Difformitys. Certainly their Positions are all very different and distant,



according to which the several Imaginary Spheres have been Invented, (and they might have Invented many more, as some have done) and their Courses are like a *Chorus* of several Dances; and though I do not think with *Pythagoras*, that they produce any Harmonious Notes or Numbers, yet they are according to some Symmetrical Measures among themselves, though unknown unto us; as all things which are most Admirable in themselves, are least Intelligible by us. And such also are their Motions; for so the common *Æther* only Moves about the Inferior Globe, as its Center; because that or any other Imaginary Sphere therein cannot Move otherwise, unless it should Remove out of its own Elementary Place and Position; but the Moon doth only Move Progressively, and not about her *Axis*; and her Progression is with so many repeated Revolutions, Eccentricitys, Epicyclicitys, *Apogæa*, and *Phases*, that none hath greater Variety in the whole, and yet she is most Constant in her Inconstancy: *Venus*, and *Mercury*, Move about the Sun, and the upper Planets about the Sun and Earth, and the fixed Starrs, though so termed from their supposed Fixation and Immobility, yet are found to Move Progressively, though more slowly; which I conceive is recompensed with a most quick Motion about their *Axes*, and that this is the very cause of their scintillation, proceeding from the quick Consecutions of the Solar Rays which Collustrate them, and which the Eye cannot so quickly behold, as it may the Rays of Planets, which Move not so nimbly about their *Axes*: for so if there be any such variation of the Radiant Object, as in the Undulation of Water when the Sun shines; or of the Organ, as if you walk by a Glass window Reflecting the Direct Rays of the Sun rising or setting; or of the *Medium*, wherein Vaporious Fumes may cause various Refractions; there will seem to be such a Twinkling or Trepidation of the Light. And according to their several Positions and Motions so there are several Illustrations of them by the Sun; whereby sometimes they appear, and sometimes disappear; as *Mercury*, and others; and sometimes one part of their Bodies appear, and sometimes disappear; as the Moon: and they have several *Phases*, as she, *Venus*, and *Mercury*, which are below the Sun; whose half Disk is yet always Illustrated in themselves, and so appears in one part of the Earth or other; but always variously in any several parts thereof; and others which are above the Sun have

have their Disks every where appearing Lucid: And there are not only very various Oppositions and Conjunctions, and many other Vicissitudes, which are continually altered by their Motions; but certain Fixed Constellations, as I have shewed; wherof there are more notable Influences, (as it is expressed of *Pleiades*) because, as they have all some Influential Qualitys, so by their Combinations and Colluminations (as they are therefore also called the Bonds of *Orion*) they do mingle and Contemper them, and so Cooperate together. And yet they are all one Host which is so Collustrated by the Sun: and that is a very great Host, and Innumerable to us; which, though the Antients generally confined within Six Magnitudes, and Moderns can particularly tell the Number of them all not very much exceeding one thousand; that is, as I suppose, of so many as they are able to Discern and Number, yet indeed God only can tell the Number of the Starrs: and so he saith to *Abraham*, who was esteemed no mean Astronomer, *Look toward Heaven, and tell the Starrs, if thou be able to Number them*, and *Moses* to the *Israelites*, *Ye are this Day as the Starrs of the Heaven for Multitude*, and though the Tribe of *Levi* was not then Numbred, their whole Host was 603550, besides Women and Children; and in *David's* reign 1300000, also besides Women and Children: and so certainly we cannot determine the Number of this Heavenly Host, that is, also of all those Minute Starrs in the Galaxy, which do not appear distinctly, and others, which do not appear at all, but yet I do not conceive that their Numbers were Parallel; for the Number of the *Israelites* was Variable, but the Number of the Starrs Invariable; only they are Analogous in this, that as the whole Number of the *Israelites* was never known, because the less sort of People, that is, Women and Children, never were Numbred, so the less sort of Starrs can never be known, and therefore not Numbred. Now besides these wonderfull Varietys, and all their several Influences, these, Celestial Lights, were purposely made for *Signes*, and for *Seasons*, and for *Days*, and for *Years*; which they distinguish into as many Varietys, and certain Fixed Periods, by their certain and Regular Motions; wherof the Diurnal Course of the *Aether*, and Annual of the Sun, are mentioned, as chief; because the first doth make Day generally, and the other particularly: and yet they also are Asymmetrical, and Incommensurable one with the other; and the



the next to them is the Menstrual Motion of the Moon, which maketh Months, and that also is Incommensurable with either of them; according to which, besides the Sabbath Day (which was made for Man, or Mankind generally; and so Instituted first in Paradise, and is still kept and observed by virtue of that first Command, and only the Circumstance of Time varied, whereby it is exalted from a Rest of Creation to a Rest of Redemption) and also the Annual Feasts, and Jubiles, according to the Motion of the Sun, there were also Monthly Feasts in the New Moons, and the like, according to the Courf of the Moon, appointed by God for the *Jews*. And becauf, as we cannot work according to Mathematical Exactnes, so also we cannot know Astronomical scrupulosity; therefore the Priests were to blow with the Trumpets, as it is said, *In the Day of your gladnes, and in your Solemn Days, and in the Beginings of your Months*, to call the Assemblies, and give notice to the People when they should begin them. And so also there were Weights and Measures of the Sanctuary, or there repositied as Sacred things; as it is said, *A iust Weight and Balance are the Lords*: and therefore the Standards therof were kept by the Priests: but certainly these Measures could not Commensurate that which is Naturally Incommensurable: and so it is supposed, that wheras it is said of the Lavacre or Brasen Sea, that it was *Ten Cubits from Brim to Brim, or from Lip to Lip, round in Compass, and a Line of Thirty Cubits did compass it about*, that it was so not Exactly, but *Rotunde*, according to the common Mechanical Account: which becauf more Curious Mathematicians will not accept; and therupon insult over Scripture; and from this one Expression would prove all others therein to be Popular, and themselves to be the only Exact men; I shall heer farther examin it; and desire them to reconsyder how it was a Vessel having Brims, or Lips; and so is said to be Ten Cubits from Lip to Lip Inclusively, as *A Capite ad Calcem* is also so rendred Inclusively, — *Talos a Vertice pulcher ad imos*: and the Compass of the Body of the Vessell itself was under the Lips Exclusively; as it followeth, and under the Brim of it round about Knops compassing it, *ten in a Cubit, compassing the Sea round about*: whereby also we may understand what was the particular Breadth of the Brim or Lip; that is, almost a quarter of a Cubit (but never according to Mathematical Exactnes) and therefore the Measure therof

therof is not otherwise particularly mentioned; as it is of the Body, that *the Thicknes of it was an Hands breadth*. But I shall leav these Disquisitions to more learned Criticks, who, if they pleas to understand Scripture, not according to such Maligne, but Benigne Interpretations, shall find therein not only Verity, but the greatest Curiosities couched in the most Mysterious Expressions: and so I profess, and hope to shew through this whole Discours, that when Scripture and Nature are thoroughly examined and sifted to the utmost, they will be found to be most Concordant, one with another; and all Scripture, as well as Nature, with itself.

V. Though, as I have shewed, there are no new Starrs Created, nor any Annihilated, as some affirm of the *Pleiades*, or Seaven Starrs, as they are commonly called; but as *Ovid* observed of them in his time,

*Quæ septem dici, sex tamen esse solent;*

so long before him in Scripture they are called only by the Name of their Contellation, and no where Numerically Seaven, as Translators render them; yet since the Heavens as well as the Earth were cursed for Mans sake, there are also some *Anomala* and Meteors in Æther; and such as are not like the Starr of our Savior, which was made by a Miraculous production; but Monstrous and Prodigious; wherof the Antients make mention, as that which appeared at the death of *Julius Caesar*, to celebrate his *Exit*, as the other did our Saviors *Intrat*; which was some extraordinary Comet in the Æther, where they denied any Comets to be, and affirmed it Ingenerable and Incorruptible, both in the whole, and in every part therof; whereas now plainly there are found to be in it both *Macula*, and Comets: and the *Macula* are such Luminous *Flocci* as are either *Æthereal Effluvia* of the Luminarys, or perhaps sometimes *Confluvia* of the Æthereal Matter, and of which, as I suppose, the Comets are Composed, as Aereal Meteors are of Vapors: but there is no mention of any such in the Six Days Works, which were all Good and Perfect; though, as I have shewed, there was in the first Day a *Confluvium* of the Æthereal Light, which was afterward in this Fourth Day divided and formed into the several Luminarys, and which was the Goodnes and Perfection therof. But as all Æther is



Motive and Planetary, and every Luminary therein hath a proper Specificall *Compositum* and Qualities, as well as it is Generically *Æthereal*; so I suppose these Redundances and Excreescences thereof, being Composed of several parts of them, have accordingly Mist Bodys, and Planetary Qualities, whereby they perform their odd Motions, and Courses; and when this Meteorical Composition is dissolved, then they disappear and cease. And there are not only such *Macula* continually in *Æther*, which do not alway Conglobate into Comets, but very often less Comets not so much observed by us, or not on Land, as Seamen say they see them at Sea: but such as are greater, and perhaps more Concocted, are by us commonly called Blazing Starrs; which indeed are no true Starrs, but only *Stella fatua*, (as I may call them, alluding to the like Meteors in the Air, which we call *Ignes fatui*) and yet differing from *Stella cadentes* therein, which are so called from their falling again to the Earth; being Composed of Culinary Flame; whereas Comets being Composed of *Æthereal* Substance, when they are Corrupted, are resolved into it again; and they differ from the true Starrs, in that they are so Composed and Dissolved only by Meteorical Generation and Corruption, and not by any Improper Creation, as the others: and though they also be Illustrated by the Sun, and thereby have a notable Emanant Light, yet they are far more Dull and Obtuse; so that as the Sun is the Universal Illustrator of all this Spectable World, he doth more or less Illustrate every Spectable thing, as it hath more or less of the Connatural Lucidity in it; and thus the Terreous Opacity, which is contrary to Light, doth Reflect, Refract, and Distend it, as I have formerly shewed; and Black, which hath most Opacity in it, doth ingage the Light in the Encounter, and more detain it thereby; Also though the Solar Rays be not Engaged, as I said before, in the Opaque Body, nor partly detained, as in Reflection from the Opaque *Fundus* of a Diaphanous Body, as of a Jewell, Looking-glass, or the like; but may be otherwise Reflected from any Polite Body, as a Steel *Speculum*, or the like; yet they are thereby Retunded, and their Reflection much abated: and the strongest and farthest Reflection, or rather Collustration is, as I said before, when the Solar Rays meet with such Lucidity, as is more *Æthereal* and Connatural unto themselves: for indeed that

is not so properly a Reflection or Repuls, as an Influxion and Concurrence, like a great Stream that falls into the Chanell of a less, and so both flow together. Now the Inherent Light of Comets being not only *Æthereal*, but Meteorical, and more Heterogeneous, the Solar Rays do not so Collustrate and Colluminate with it, as with the perfect Luminarys: and this also proves to me that there is such an Inherent Light in all the other *Ætheruli* themselves, because the Sun doth accordingly Collustrate and Colluminate with them proportionably to their own Light in several maners and degrees; as in the Fixed Starrs, in the other Planets less, and in the Comets yet less; but least with the Inherent Light of *Æther* itself. And perhaps the Solar Rays are tinged and varied, by being so Mist with the Stellant in their Emanations, which he causeth thereby, and whereby they appear so very different: certainly the Inherent Light of Starrs is much greater and stronger then of Comets, which the Sun partly penetrateth, as he doth a Globule of Glass; for a stronger Light Inherent doth Terminate and not Transmitt the Solar Rays, as we cannot see through a greater Flame of Light, as we may partly through a less, as through the Flame of Spirit of Wine, or the like; though any other such Light makes Objects to appear very strange and ghastly, as the Efflamation of Furnaces, and the like. Now the Solar Rays which are thus Transmitted, but not so freely, through the Comet, as through the *Æther*, by that Offence and Interruption do, as I have shewed, Converge, and so go out at the farther *Umbo* more sharp and comprest, and then again dilate themselves, which is their *Cauda*, in the more Rare *Medium* of the *Æther*, like Comprest Vapors which so issue out of an *Æolipile*; and they are always in that part which is averse from the Sun: whereas the Moon, though she hath Spotts, which are less Luminous then her other parts, yet doth not Transmitt the Solar Rays through them; which shews even those Spotts to have more Inherent Light in them then Comets, though they may not seem to us so Lucid Comparatively, in respect of her other more Luminous parts. Also Comets are Globular as well as any other Luminarys, and they are not only carried about by the *Æther* as well as Starrs, but have their own Altitudes, and proper Courses, as they happen to be placed in the *Æther* in their Generative Composition, according to which they also Move by their Mist Planetary Virtue; as God first sett



the Starrs in their Stations and Orders, according to which they perform their Courses by their several Planetary Virtues. And thus indeed according to Statike Law, if any Body Move in another by any stronger Spiritual *Potentia* then the *Pondus* of its Body would caus it to Sink or Swim in the other, it will neither Sink nor Swim, but Move Progressively according to the Moving *Potentia*: as a Man so swims in Water by fitly Moving his Body with a stronger *Potentia* then the *Pondus* of his Body in that *Medium* would caus it to Sink; and so also a Bird flies in the Air: and though I conceiv the Starrs to be Fluid as well as the *Æther*, and *Æther* as well as the other *Expansum* of Air, yet I also acknowledge, that if they were Dens and Terreous Bodys, yet some of them, as the Sun and Moon, and others, might notwithstanding so Move in the Rare *Æther*, by their very rapid Motions, according to their own several Courses, and so perhaps, not Sink in it: though otherwise, I say, that no Body whatsoever, Magnetical, Planetary, or Sensitive, can Move itself without a Fulciment to keep it from sinking; which Invincibly proves that the Earth cannot so Move, unless, it being most Consistent, Dens, and Heavy, could by any Planetary Virtue in itself be so supposed to Move in the most Rare and Fluid *Æther*, as that it should not Sink therin, by supposing also such a rapid Motion therof Annually, as must be admitted according to the Zodiac, and Circle, which it is said to describe, and which according to the *Phænomena* one way or other, must be the same with that wherein the Sun doth Realy Move; whereby that Motion will be found to be, as I said, almost fifty Miles in a Minute; and then unless we can also suppose that the Earth would sink and fall so fast through the *Æther* in the very first Degree of the Velocity of the Motion of Descent, which must be swifter then the aforesaid Motion, it will not so fall or sink: which to estimate more exactly I leav to the Curious. But wheras Judicial Astrologers pretend to foretell by the Starrs, and especially by Comets the Fates and Fortunes of Men, yea, their very Imaginations, Affections, and Inclinations, and, which is yet more, Divine Counsels and Intentions, it is certainly most Unchristian and Intolerable: for Originally God made the Starrs to be for Signes, and for Seasons, and for Days, and for Years, which is therefore so Emphatically repeated; not as Ostents or Portents, wher-

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of there could be no use in that State of Perfection, but for Signification and Indication, as well as Causation, of Seasons, Days, and Years, which were certain, constant, and orderly, when there were yet no Meteors in Earth, or Air, and much less any Changes, Confusions, and Disorders, in the Superior Natures; nor did they then portend that greatest Change, and most Dire Event that ever was, or shall be in the World, which was the fall of Angels and Men; otherwise themselves might easily have foreseen it: wherefore certainly they were not first Created to signify any such Contingencys, but only Natural Futuritys: and now wheras they affirm, that the Starrs do by their Influences govern the Bodily Humors, and by them the Minds and Spirits of Men, let them shew us the Experiment of that, which they make to be the Foundation of their Art, and (as it is said of *Thales*) foretell what will be dear next year: wheras their Prognostications of any such Contingent things in their yearly Almanaks are generally as false as true; though I grant, as our Savior saith, that such who are weatherwise may probably foretell what shall so ensue the next Day, or some such short time after: *In the Evening ye say it will be fair weather, for the Sky is red; and in the Morning it will be foul weather to day, for the Sky is red and lowering.* Thus also they represent Eclipses as very Prodigious things, which yet they know are most Natural, otherwise they could not so foretell them; and if Man had still continued in Paradise, they must naturally have been; yea, it were the greater Monster and Prodigy, if they should not so constantly happen. And though Comets, which are Extraordinary, may produce Extraordinary Effects, as other Meteors, Thunders, Earthquakes, and the like, and are sure Signes of what is past, that is, the Fall of Man, which hath been the Cause and Occasion thereof, and so are to be regarded; and may be also Extraordinary Ostents of Gods future Judgments; yet it is also as true, that we cannot read this Hand-writing on the Wall of Heaven without a Supernatural Revelation or Indigitation; as the *Magi* were directed by Angels, (of whom it is also said they were warned in a Dream) otherwise by all their Art they could never have found out the very Town, yea the very House in the Town, yea the very Place in the House where the Child lay, and over which the Starr is said to have stood: so neither could the most Curious or Caba-



listical Judgment of any Man have foretold the Retrocession of *Hezekiah's* Sicknes by the Retrogradation of the Sun ten Degrees on the Dial of *Abaz*: and the Signes in Heaven and Earth at our Saviors Death probably were as Miraculous as the Starr at his Birth; and that Darknes no common Eclips of any Luminary, but an Obtenebration of the *Æther* itself over all that Land, as the Earthquake was also therin; and all the Signification therof was plainly declared by his present Suffering, which made the Centurion cry out, *Truly this was the Son of God!* Wherefore, though I honor Natural Astronomy, and only wish that it were rectified according to this Divine Rule of Scripture, (as I would also gladly be corrected by it in any mistakes of the Natural *Phænomena*, or any Expressions therof) so with the Scripture and all Christianity I must conclude against all such Judicial Astrology, as an Heathenish Artifice, wherof we are expressly forewarned, that we should not be *dismayed at the Signes of Heaven, for the Heathen are dismayed at them*: and *Let now the Astrologers, the Starrgazers, the Monthly Prognosticators stand up*, and shew how they can maintein the Veracity of their Art against the Divine Verity. And now I shall return again to such Materialists, who though they cannot affirm, that becaus a whole Body is Moved up or down, this way or that way, therefore it ceaseth to be the same, yet can suppose, that if the parts in the Body be Moved in such a maner, as neither they nor we can discern them, there being a new Corporeal Texture, Schematism, and Mechanism therof, it shall therefore acquire a new Individual Spirit and Spiritual Qualitys, by such Local Motion, as it doth by Physical Generation and Corruption; which may be best Experimented in the vast Body of *Æther*, wherin there are also so many Orbs continually Moving so many several ways, and yet they do not therefore ceas to be the same *Æther*, and the same Orbs, that they were before: and so will any other *Compositum* be the same, though the Parts in it Move this way, or that way, or any way whatsoever, unless there be a new Generation to alter it; otherwise only the Figure and Situation of the Parts in the Whole will be altered, but not the Physical Nature of the Whole, or Parts: and so though their *Hypothesis* be of less Corpuscles, and not of such great Bodys, (which, as they propound the others, becaus they are Indiscernible, so I propound these, becaus they are more discernible) for the reason will be the same

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in these Elementary Natures, though the Parts be never so minute; as every part of Water is Water, though it be never so small, and though it be Moved any way whatsoever: and so suppose the Parts of any one Orb to Move in the Orb, as all the Orbs do in the Æther, they will no more alter the Orb, then the Orbs do the Æther: and if Matter and Motion cannot thus make or alter Elementary Natures, which are Inferior, much less any others that are Superior: and I suppose, that the Superæther is altogether Immoveable, both in the Whole, and in all the Parts therof. Wherefore, since this and all the other Heavens are so Stupendous, (that as some suppose, they are therefore so Named) let us not conceiv, that we, or any Angel, could Mechanically form those Glorious Bodys by any the most curious Artifice, and much less by our own Imaginations: but acknowledg the Divine Creation, and Original Institution of Æther, and all the Luminarys therein, which have been from this Beginning therof, and so shall continue and persevere untill the dissolution of this present Elementary World, Ingenerable and Incorruptible in the Whole, though not in all the Parts therof.

VI. Now let us praise the Father of Lights for all the Luminarys of Heaven, the Sun, and Moon, and Starrs; which the Heathen World formerly adored, and which we ought all to admire, and to adore him who is the Creator therof; whose G'ory the Heavens declare, and the Firmament his handiwork: which, though we behold them according to their seeming Aspects, yet we perceiv not their Real Magnitudes, and Altitudes; and much less their wonderful Motions, and Influences: and though they are but small Portions of one Element, yet are many of them greater then any other, and some of them then all the rest: whose Positions are higher above us then the Center of the Univers is beneath us; and whose Motions are without any Rest, and yet swifter then of any other Bodys, and stronger then of Spontaneous Spirits. And they are all such Locomotive *Automata* in themselves, and every one Moved by his own proper Power, going on in his own Path, both distant and different from another, but never from itself either in Space, or Time: which are the grand Horologes of Nature, without any Weight, Springe, or *Pendulum*, and yet farr more constant and certain, not only marking and dividing by Lines and Numbers, but making



making Day and Night, and all the Seasons in the Year, and such long *Secula* and Revolutions, as probably shall never attein any Natural Period, but be Violently prevented by the Final Conflagration; which shall be effected by their own *Æther* and Element of Fire, and all these Firebrands therof, who as they were Supernaturally Generated, so shall also be Supernaturally Corrupted. And yet while this Elementary Globe doth stand, it is Preserved and Governed by their Progresses and Circuits about the Inferior Orb; who as they pass along scatter the *Missilia* of their various Influences. And though they being a very great Multitude, to us seem to be in a continual Rout, yet every one of them marcheth in his own Rank and File, and they are all severally distributed into Troops and Partys of Constellations, and the whole Host of them formeth one most Orderly and Powerfull *Militia*, wherof *Sol* is the great General and *Imperator*; who himself alone is able to conquer all the Inferior World, not only by encountering it with his Victorious Presence, which would burn up all before him, but by his very Flight and Absence, which would otherwise destroy them, through their own Indigence and want of his Vital Heat: who as the true *Adonis* brings along with him in his Accesses all the Fruits of the Year, and *Fœtus* of *Animals*, and again carrieth away all that is Annual in his Recesses: who is *Sponsus Natura*, As a Bridegroom coming out of his Chamber, and rejoicing as a strong man to run his Race. His going forth is from the end of the Heaven, and his Circuits to the ends therof. And there is nothing hid from the Heat therof.

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SECTION

## SECTION XI.

And God said, Let the Waters bring forth abundantly the Moving Creature that hath Life, and Fowl that may fly above the Earth in the open Firmament of Heaven. And God Created great Whales; and every Living Creature that Moveth, which the Waters brought forth abundantly after their Kind; and every winged Fowl after his Kind. And God saw that it was Good. And God blessed them, saying, Be fruitful, and multiply, and fill the Waters of the Sea; and let the Fowl multiply on the Earth. And the Evening and the Morning were the Fifth Day.

## EXPLICATION.

God having prepared the Elements, Vegetatives, and Æthereal Luminarys, in order to the production, and for the use and service of Sensitives, did then cause the Waters to bring forth Fishes, whose Spirits were before latent in them, according to their several Kinds; and particularly Whales, the greatest of all *Animals*: and so also caused flying Fowls, according to their several Kinds, to be produced. And this was their Specificall Goodness and Perfection. And after God had thus made them



Good and Perfect in themselves, he added the Blessing of Procreation, whereby Fishes should multiply in the Waters, and Fowls on the Earth, according to their Kinds. And these were the Works of the Fifth Day.

## ILLUSTRATION.

1. Of Fishes and Fowls. 2. Of Sensation. 3. Of the five Senses. 4. Of Imagination. 5. Of Appetite. 6. Of the Goodnes of the Works of the Fifth Day.

I. **W**E now ascend into the Region of Life, which is not only above all Elementary and Vegetative Nature, but also so farr different from them as the same Living *Animal* is from its own Dead Carcass: and though I have termed them all generally Spirits, whereby I intend only Substantial Activitys, though they do not breath and Live, as Sensitives, and the Soul of Man, which therefore, to distinguish from others, I shall only call Souls or *Psyche*, and so Hebraically they only are termed Living Spirits or Souls: though as the Poets termed Water, Stone, Turf, and the like Vive, so both they and Philosophers conceived that Vegetatives did indeed Live; as appears by their Fabulous Transmigrations of *Animals* into Flowers, and Trees, and their *Anima Vegetativa*; whereas Scripture thus speaketh only Metaphorically, when it mentioneth Living Water, Stone, Bread, and the like; or that Trees and Corn Dy: and I shall never differ about Terms, but only contend, that Elementary or Vegetative Spirits are also Substantial Spirits, (which Expression they, who also call them Vive, may very well allow) but I also affirm, that they do not Live as these Living Spirits; nor have any Perception or Appetite (which is properly and truly Life, as I shall shew hereafter) to defend my self and all my Expressions from the Opinion of them, who either affirm both Vegetatives and Elements, yea, Matter itself, to be Sensitive; because they have such Affections, Inclinations, and Principles Created together with their Substances, and Imprinted in them by God, according to which they Act and Operate, and produce such Effects Naturally, as Sensitives do Ingeniously, Spontaneously, and Artificially,

Artificially, with Perception and Appetite, Knowing, Affecting, and Intending, what they do, which those Inferior Natures do not, nor cannot, because they have no such Perception, nor Appetite properly and truly, though Metaphorically they are also ascribed unto them in respect to such Effects: and also of others who, because these Inferior Natures have not any such Perception or Appetite, therefore deny them to have any such Natural Principles so Created or Imprinted in them, whereby, according to their several Natures thus Originally Instituted and sett in order, they proceed to Act; and conceive that only the Spirit of God Immediately doth still Move on them all, as on the first *Chaos*; and so by Matter and Motion only doth Generate and Corrupt all such Inferior things; which he did first Institute and sett in order in the former first Days, and all their Original Generations and Corruptions, as well as the others in the two last Days: otherwise all the Works of those former Days, which were also in preparation to the latter, had been vain and supervacaneous; which I have sufficiently refuted; and shall now proceed to discourse of Sensitives, which indeed are far more Noble Natures, and as I said, so much Superior to the other, that heere God is said again to Create, in giving Life, or causing that, which though it was the same Spirit in itself latent in the *Chaos*, and had Potentially Life in itself, yet did not before Live. Now to Live Actually; and thus to raise from Death to Life is a most Miraculous Work, and most like to a Proper Creation, not only in the suddenness thereof, as Incension, (for certainly nothing can Live, and not Live in the same Instant) but in the Excellency thereof, whereby the *Animal* is as it were raised up from the Grave, and out of that dead Sleep, wherein the Body or Carcass of all the Inferior Natures, wherof it is Constituted, did before ly. And this is Eminently spoken of Whales the greatest of all such *Animals*, though of the lowest Kind thereof, that is, of Fishes: for as in the same Vegetative *Classis* there are three general Kinds mentioned, Grass, Herbs, and Trees; so also in this *Classis* of Sensitives, Fishes, Fowls, and Beasts. And as the Elementary Bodys of Sensitives are far more Organical then of Vegetatives, as fitt Instruments of their more Operative Spirits, so also their very Vegetative Spirits, which in their Compositions are subordinate unto them, are more Excellent, and have a more Curious



Nutrition and Augmentation, and most notably another manner of Generation: for whereas it is said of Vegetatives, *Cujus Semen seipsum seminet*, heer is added a special Blessing of Procreation to Sensitives; and Perfect *Animals*, such as God Created, do not grow out of the Water, nor out of the Earth, as some Vegetatives; nor only by Putrefaction, and the like, as many Anomalous Sensitives; but are Generated by Conjunct Procreation: and they are made of two severall Sexes; as is expressed of all such as entred into *Noah's Ark*, that they were Male and Female: and therefore a *Phoenix*, which is only of one Sex, is such as was not to be found there, and indeed only a Poetical Creature; and the Male and Female Piony made such only by the Gardiners Fausy: for certainly they do not propagate by any Conjunct Procreation. But the Sensitive Spirit itself, and the Living Powers thereof, are farr above any Vegetative Spirit, or the Facultys thereof. For as the Matter is so Divisible, that it is as it were alway Divisible, and every Part and Particle thereof will still be the same Homogeneous Matter in all respects; so Elementary Spirits, which do Immediately Consubstantiate it; are therefore most Material, or United to it, and Coextended with it, and if they be so Divided with it, yet, as I have said, every Part and Particle of Earth will be Earth, and of Water Water, and so of the rest generally; though in some respects, as I observed of Terreous Consistence, there may be a difference between Majority and Minority of their Bodys: and Vegetatives, though every least Part or Particle of their Organical Bodys be not a sufficient Domicil and Officine for their Spirits, becaus they are Organical; yet the Branch or Twig of many Trees being sett, will Radicate and Grow, reteining therein a sufficient Portion of their Divisible Spirit to erect a new Oeconomy, and form itself into another Individual Tree, as well as the Root and Stem: but if Sensitives be so Divided, whereby the Principal Parts thereof, as the Head, Heart, or the like, have their Organism destroyed, they cannot Live; and any other Part Divided from them will not Live long; as an Eel cut in pieces: and yet as Fishes are of the lowest Kind of Sensitives, so generally after such Dissection they Live longest: I have seen a Tench slit and Exenterated to leap in the Pan where it was fried; and Fowls will not Live so long as they, nor Beasts as Fowls, as a Chicken after the Head is wrung off Moves itself both.

both longer and stronger than a Beast Decollated, which shews the more Indivisibility of their Spirits. But, as I said, the grand difference between Sensitive and any Inferior Spirits is their Perception and Appetite: for so, though Elementary and Vegetative Spirits also Move their Bodys, yet only Sensitive Move them with Apprehension and Spontaneity, this way, and that way, and every way, as they pleas; and so, though their Motive Powers may not be so strong, yet they are Living, and more Spiritual: and thus they Feed, and Generate, and Act all their Sensitive Operations Sensitive; otherwise they should not be Sensitive. Yet according to the Degrees of Sensitive in their own *Classis*, so also is their Locomotion: and thus Fishes, which are the very lowest Kind thereof, are Originally termed Reptiles; as their Swimming is indeed a kind of Creeping, or Sliding: and so an Eel swims in Water as a Snake Creeps on Land; and though other Fishes in Swimming shoot forth Directly, and make no Curv Lines, yet they only Slide in a more Direct maner; and their Bodys are of a Direct and Oblong Figure for that purpose, being born up, and partly carried, upon an Equident Fulciment of Water: but there are also Testaceous Fishes, which are Gradient, having Claws and Legs for that purpose, like Beasts; and if they Swim, it is also like the Swimming of Beasts: yet that Motion is another kind of Creeping; and they are more Tardigradous, and Multipedous, as generally more Infirm Bodys are, which need so many Fulciments: and Shellfishes which have no Claws nor Legs, as Oysters, Muscles, and the like, are most Infirm, and, as I suppose, Imperfect *Animals*: but they are no *Plantanimals*, as others term them; for plainly they are Sensitive; and therefore of the Sensitive *Classis*, and so to be Denominated; which appears by their Flesh, and by opening and shutting their shells accordingly as they Sensitive Affect or Disaffect any thing, and many other such Indications of Sens: and though they Continue in their places, yet they are not Rooted in them, nor do Cohere therunto, like Vegetatives; becaus all Sensitive, as I said, are less United to the Elementary Matter, both Internally, and Externally, then Vegetatives: and that which is called the Sensitive Plant, is not properly and truly Sensitive, but only fancied to be such, as I said of the Piony: and so the Oatbeard, Marigold, *Heliotropium*, and the like, may as well be said to be Sensitive: wheras clearly their Mo-



tions are without any Perception or Appetite, and only by Elementary Rarefaction and Condensation of their Bodys, or by some kind of Vegetative Expansion and Compression, as I shal shew afterward. As Fishes are expressly said to be produced out of the Waters wherein their Spirits were before latent, so they require a Body Aqueous, wherein they Reside and Operate; and they were accordingly formed of the Water, as it was then Mist with the other Elements, and thereby prepared for such productions and formations: and though some may wonder, as I have formerly, at this strange formation of the Bodys of Fishes, how their Flesh, and Bones, which are Firm and Consistent, (though not so much as of Fowls, and Beasts,) should be made of Fluid Water, which could not be Transmuted into Earth, since there is no such Transpeciation, as I have before proved; yet heer also we may see how these Mysterys of Scripture and Nature do Consist and Correspond together: for so it is found by Experiment, that some Trees, and Fruits, as Willows, Pumpions, and the like, may be as much Augmented thereby: and so the whole Sensitive Body is still formed of Bloud: for every *Mistum* containeth all the Elements, and their Virtues; and there is in Water, or Bloud, also sufficient Matter (and so drink, if not so Nutritive, yet may be as Augmentative as Meat; as appears in such who drink much, and eat little) and Sensitive Bodys, as of Tadpoles, may be formed of Water, and if we consyder the Mistion of all the fower Elements, and the Doctrine of Potentialitys (which I have before deduced from the *Chaos* of all these Potentialitys) and already approved by many other Instances, (as also it may be clearly confirmed heerby) we may understand how, as I have said, it is indeed the *Clavis* of all Generation and Corruption: for thus all the Terraqueous *Composita* are Terraqueous, having also some Mixture, though less, of Air, and *Æther*, in them; and so in their Generation or Corruption, if the Terreous Qualitys be Actuated, they appear to be, and so indeed Actually are, Terreous Bodys, and have a proportionable Firmnes or Consistence, which, as I said, is a Terreous Quality; as Smoak is turned into Soot, and the like: and if the Aqueous Qualitys be Actuated, and the Terreous reduced to their Potentiality, then the same Bodys will be no longer Firm and Consistent Actually, but Fluid; as in Fusion and Corrosion of Metalls, whereby it is said, that even Gold itself

self may be reduced to an Oil, or to some such Aqueous Body, and others affirm the like of any Terreous Bodys whatsoever: and so though Aereous Qualitys, according to the less Mixture of that Element in Terraqueous Bodys, are not so easily and commonly Actuated, yet thereby, or by Vapor, or both, Camphire, and Salts, may be Volatilised; (as Meteors may be in the Air, like *Amurca*, or Mudder, standing in the top of Water): yea, by Actuating the Æthereous Qualitys therin, the Terraqueous Body may seem to be all Fire; as Iron Candent, Pitch, Wax, Tallow, Oil, Spirit of Wine, and the like, Inflamed. But the Bodys of Fishes are not so Terreous as to Sink to the bottom, nor so Aereous as to Swim and float above the Water, being most fitly poised, and prepared for their Moving in their Native Element, Water. As the Spirits of Fishes are Sensitive, so the more Perfect have all Senses, except Hearing, which some deny, and also that they have any Auditory Nerve: certainly they do not hear themselves, because they are generally Mute; and yet I rather conceive that they have also the Sense of Hearing, because they have the more excellent Sense of Seing, though perhaps their Hearing may be very Dull, as their Element of Water is no very fitt *Medium* of Sound. Yet Oysters, and such Imperfect Fishes, have neither of these Scientificall Senses, Seing, or Hearing; but only Feeling, and Tasting, and perhaps Smelling, which, as I have said, is Concomitant and Assistent to Taste; though the distinct Organs of any Sense are not discernible in them, nor any Brain or Heart, but they seem to be one Lump, with something like a Bloud in it, which all Sensitives have, and also, as I suppose, something Analogous to the Organs in more perfect *Animals*, of such Senses as they have; and so of Imagination, and Appetite, which are the common Sensitive Fountains of all the Senses, and wherein they Subsist, (though they have no Imaginative Ingeny) as I shall shew afterward, and therefore no Sensitive can be without them, and consequently not without some apt Organs thereof. And heer I must observe, that as every Specificall Nature is most excellent in its own Specificall Difference, because it is the very Specificall Difference thereof; so in the same *Class*, the lower *Species* may have some Inferior Qualitys more Excellent, or at least more Vehement and Notorious than the Superior. Thus Fishes are generally more Voracious, and less Valerudinary, than other Sensitives, and Augment vastly, and Procreate.



create abundantly, especially such as Generate by Ejection and Superinjection of their Seeds, and not by Copulation, as is reported of Whales; and their Fecundity is expressly mentioned in the Text, that the Waters brought them forth abundantly, and so again Emphatically repeated: and therefore I do not conceive, as some, that this Difference happened by the Deluge, which indeed did not concern Fishes, because it is so intimated in their very Creation. But in all these and many other Piscine Qualities and Faculties the Whale, and such other grand Animals of the Sea, do excell; and such *Thynni*, *Balana*, and *immania Cete*, are therefore called Sea-monsters, not because they are Anomalous, but from their vast and terrible Greatness; and the chief of them, which is supposed to be the Whale, is termed *Leviathan*, whom God himself hath largely described elsewhere, and saith of him, *Upon all the Earth there is not his like, he is King over all the children of Pride*, I suppose, in respect of his great Bulk and Strength generally; though his strength in proportion to his Bulk be not so great as of many Terrestrial Animals, especially the Elephant, which is also termed *Behemoth*, and who in that respect is said to be *Chief of the ways of God*. But Fowls are of the least Bodily Magnitude, though their Spirits be of an higher Kind than Fishes, and yet more allied to them than to Beasts, and therefore made in the same Day with them; and so it is also observed that their Brains are more Conformable to the Brains of Fishes, and the Brains of Beasts to the Brain of Man. The Bodys of Fowls are less, because the Air in which they were made to fly, is a more Rare and weaker Fulciment than Water, though otherwise their flying is Analogous to Swimming, and such a kind of Sliding or Creeping, and their Wings and the Motion thereof to Fins and the Motion thereof: and as they were not produced out of the Air, nor their Bodys formed of it, (for, as I said, all Animals as well as Vegetatives are Terraqueous) so neither of the Water, as Fishes; for it is not so said of them, but as it is Originally, Let Fowls fly in the Firmament of Heaven: and the other words following, *and every winged Fowl after his Kind* seem rather to refer to Gods Creation of them both in that Day, then particularly to their Creation out of the Waters: and it is said afterward of them, as well as of Beasts, *And out of the Ground God formed every Beast of the Earth, and every Fowl of the Air*: but whereas  
plainly

plainly it is said that Fishes were produced out of Water, and Beasts out of the Earth, and neither is so before particularly expressed of Fowls; I suppose they were made of some more equally Mist Terraqueous Substance, wherein neither Water did so much Predominate, as in the Bodys of Fishes, nor Earth, as in the Bodys of Beasts: and accordingly the Bodys of Fowls are of a midle Substance, not so Tender as of Fishes, nor yet so Firm and Solid as of Beasts. But Fowls, though they be generally Oviparous as well as Fishes, yet also Procreate by Copulation, and not by Exclusion of the Seed Immediately, as Vegetatives, and as Fishes generally are Procreated; nor yet by Gestation in the Womb untill there be a Formation of the *Fœtus*, as Beasts; which is a more perfect Birth, and proper to Superior Animals. Certainly they excell Fishes in their Spiritual Facultys of Sens, and Imagination, as in their Singing, Nidification, and the like; as they are Inferior to Beasts in Imaginative Ingeay, and Act generally. And wheras there are some flying Fishes, as they are commonly called, so indeed they are not Fowls, but Fishes, which generally live in the Water, as others, and only fly above it so long as their Wings are wet, which maketh them to be more stiff and strong, as Sails are stified by wetting: and so Water-fowls are not Fishes, but Fowls, that generally fly in the Air, though they can also dive in the Water, and continue there so long as their Breath lasteth, as we say; and so Otters, and the like *Amphibia*, are Beasts, and no Fishes: and though there be Aquatical Insects, which afterward prove Flys, yet this is no Transpeciation, but the Worm, both in Earth, and Water, is only the *Embryo*, or Inception, of such flying Insects, as the Vegetative *Embryo* is of a Sensitive Animal.

II. Having thus farr discoursed of these two Kinds of Sensitives, Fishes, and Fowls, generally, according to my Intention, which is only to Elucidate the general System of the World, as God himself hath declared it unto us in this Divine History of Creation, and to conferr Scripture and Nature together, I shall now proceed to discours of Sensation in the same general maner, having already declared what I intend thereby; that is, a Life with Imaginative Perception, and Spontaneous Appetite, whereby the Animal doth not only Act and Operate, as all other Inferior



Natures, but Perceiveth what it doth, and Consents to do it; and so also Contemplates, and accordingly Affects, or Disaffects the Object, about which it is conversant, and Exerciseth its Operations: which is a Double Operation, and not such a Simple, Imperceptive, and Involuntary, or Non Spontaneous kind of Operation, as there is in other Inferior Agents; but also with a Sensitive Enjoyment therof, and of itself, and its own Operations, in a Living maner by Perception and Appetite, as I said; which are the proper Facultys of the Sensitive Spirit, and that denominateth the *Animal Sensitive*; becaus Sensitive Spirits wherof Perception and Appetite are the proper Facultys are of an higher *Classis*, and farr other Nature then the other Subordinate Spirits Vegetative and Elementary, and the Matter, which they so Subordinate to themselves, according to that Scale of Nature, as I have formerly shewed: and as according to that Scale, Sensitive Spirits are Sensitive in themselves, and Subordinate the others Immediately, or Mediatly, according to the several Degrees therof, to themselves; so also their Operations are either such as they can Act and Exercise of themselves, and by their own Intrinsic Power, or such as they only Command and Govern, but are Executed and Performed by the Inferior Spirits, Vegetative, and Elementary; but how the Sensitive Spirit doth thus Command and Govern the Vegetative Spirit, and that the Elementary, and the like, is not so easily Intelligible, becaus these several Natures are Classically different; and therefore also though the Sensitive Spirit Perceiveth what it doth, as I said, generally; becaus it is Sensitive, yet it Perceiveth not how any Vegetative or Elementary Operations are done and performed by those Subordinate Spirits in its own *Compositum*; becaus they are not Sensitive, nor can they, or the Sensitive Spirit by them, Perceiv what they do, or how the Work is done, farther then as it may have some Sensation therof in itself; which is a manifest Evidence to me, that there are such several Spirits Classically distinct, and which, as I have said, are never Mist together in the same Sensitive, or Intellective, *Compositum*, becaus there are evidently in it such distinct and different Operations; wherof some are Sensible and Perceptible, and others are not: concerning which I shall discours heerafter, and now Inquire into these Mysterys of Sensation, which though they be performed within us, yet are less obvious then other things without

without us: as any may better see how a Chick is formed in the Egg, then how Augmentation is performed within his own Body. Also the higher any Nature is, the more Excellent, and Curious, and Difficult it is to be understood; And being now entred into this Region of Life, I am very conscious in what a dark *Adytum* I am, and how little Light others do afford me; but — *salis Dum his quicq; finem*. Wherefore grounding my self upon his Word, I shall proceed. It is said, *The Life of all Flesh is the Bloud therof*, or as it is in the precedent words, *the Bloud of it is for the Life therof*. And heer we shall see again how Scripture and Nature do mutually Interpret one another. And I shall first collect from these words, that all Flesh, that is, all Sensitive and Living Bodys, have a Bloud, or something Analogous of whatsoever Color or Crassitude it may be; and that this Bloud is not only the Aliment or Nutriment, but the very Rudiment of the Life therof, and indeed of the Flesh itself, and all other Parts of the Body Potentialy; as every thing is Nourished by that wherof it is Constituted: and thus it is well observed, that in the Formation of the *Fœtus*, there is a Bubble of Vital Liquor, which first Moves, and so forms itself and its own Coat or Canale, by a Vital Heat Operating upon it; whereby, in the Fermentation therof, the more Pure and Subtile parts are Congregated in and toward the middle, and the more Gross and Viscid are Segregated and amanded to the outsides; and there, as Milk heated, when it begins to cool, hath a little Skin in the *Superficies*, so this Congenerous Liquor, which is the Rudiment of Bloud, and also of Milk, doth begin thereby to form a tender Tunicle, or Vein, for itself, wherin, as in a Canale, it also begins to flow: and afterward the Heart and all the Sensitive Body is formed thereby: and as it doth thus Constitute the Body, so also it doth Nourish it; and for that purpose passeth through the Heart into the Arterys, into which it is Impelled by the *Systole* or Contraction of the Muscular Heart, and Puls therof, (which is continued, though less and less, in and through all the Arterys) and through them passeth into the Flesh, and Veins, and so into the Heart Circularly: which, most true and very Curious Observation was not understood by the Antients, nor easily admitted by Moderns; becaus the Passage therof, without the help of *Anastomases*, is so hard to be conceived;



but as all Truth which is founded in Nature, and not only in Notion, though never so Difficult and Inexplicable, when it is once offered to Mankind, will work out its own way (whereas Error, though never so Plausible, will soon be confuted by it, when they are Committed and sett together) so hath this Truth prevailed, and must prevail, because it is Truth: and I thus explicate it to my self. I suppose the Veins and Arterys to be several Canales, not runing one into another at one end, but at the other meeting at the Heart, as at a Watermill, which receiveth the Bloud out of the *Vena Cava*, as one of the Canales, and dischargeth it at last into the *Aorta*, as into the other Canale; and the Flesh to be as a very Spongy ground, between these two Canales: I say the Water discharged from the Mill will flow in one Canale with a Puls, less and less, according to the Strokes of the Wheel; which we will also suppose to be so distinctly and equally caused by every Spoke therof; and because it cannot freely pass in that Canale where it hath no farther Passage and Vent, and may soak into the Spongy Earth between it and the other Canale, it will so soak into them; and also supposing it, being in that Canale, to be raised higher (by any Engine or otherwise) it will then flow in that Canale to the Mill back again, where it hath a Passage and Vent; as, though Water will not easily flow of itself, but be detained in a Sponge full of it, unless it be prest; or more Water come to the Sponge; yet it will flow together freely in any Canale where it hath a Fall, or any other Impuls; which though in this Scheme must be supposed, yet is so Really effected by the Natural Power of the Living Body, as I shall shew heerafter. Again, as the Bloud by this Circulation and Transudation therof doth pass into and Nourish all the parts of the Body continually, (which are Potentially in the Bloud) and is the Nutriment of the Life therof; so also it is the Instrument of all its Living or Sensitive Operations: for from the Heart it passeth not only into the *Aorta*, but also into the *Carotides*, and so to the Brain, wherein it is again purified and rectified, and from the Brain discharged into the Nerve, wherein, as well as in the Brain itself, it is the Instrument of all Sensation, both Perceptive, and Motive: and this Nerval *Succus* is also that, which I call Bloud, according to Scripture, which doth not distinguish it into Venal, Arterial,

Arterial, and Nerval Bloud, but Comprehends all under one common Name, Bloud; becaus it is indeed one Continuous Flux, as the Ocean is one, though where it flows into several Seas it acquireth several Names. Having thus premised and stated the *Phænomena*, I come now unto the grand Difficulty, how all Sensitive Operations are, or can be, so curiously and wonderfully effected by the Spirits Elementary, Vegetative, and Sensitive. And first, as I formerly said, I conceiv that there is a proper Elementary Miftion, which is Subordinate to every Vegetative Spirit, as well as a proper Vegetative Spirit, which is Subordinate to every Sensitive Spirit; and in this Miftion we commonly take notice of two Elementary Qualitys, which are indeed most notable, that is Heat, and Moisture, and which we do therefore Eminently call Innate, Vital, and Radical; but certainly we cannot conceiv that the Heat is without any allay of Cold, or the Moisture of Drienes; for then they should be so Vehement and Excessive, that they should not be Vital and Radical, but Mortal and Final: wherefore there must be such a Temperament of all these fower Qualitys, and consequently a Miftion of the fower Elements, and Elementary Spirits, wherein they do Subfist; and as these fower Qualitys are susceptible of More and Less, and thereby of many various Degrees, so according to the Arithmetical Rule of Changes the various Miftions therof, besides other Simple Elementary Qualitys, may be Innumerable unto us. Now the Vegetative Spirit, to which the Elementary are Immediately Subordinate, doth Collect and Contemper for itself a proper Miftion, and fix Temperament therof, such as Naturally it requireth; that is, such as God himself, when he had first prepared the Elements, and after them Vegetatives, in making of Sensitives in this Fifth Day, did then Collect and Contemper for the Vegetative, and so prepared and instructed the Vegetative for the Sensitive Spirit, according to every Kind and *Species* therof; which was, as I have shewed, the Original Generation or production therof, and first Institution of all Generation and Corruption, according to which all Successive Generation doth and ever shall continue unto the End and Corruption of this whole Elementary World. And this proper Miftion is not only the *Crasis*, but also the *Crisis* of the Life of the *Animal*; for as it is Subordinate to the Vegetative Spirit, it is Oeconomical, and such as doth according to the Ori-



ginal Rectitude and Temper therof Naturally Increas to an *Acme*, and from thence Decreas again to a Period ; unless it be Violently disturbed or altered ; which is the true caus of all Diseases ( which we therefore call Distempers ) but if there be no such Violence offerd unto it, then the Sensitive *Animal* doth continue from the Birth untill the Death, or Dissolution therof, ( like a Lamp which goes out only for want of Oil ) in sound and perfect Health, yet with such Degrees and Variations from one Stage therof unto another, as I have formerly shewed : and though according to the State of this Original Temperament the Thread of one *Animals* Life, as we call it, may be stronger or longer then of another, yet I conceiv it is always according to this first Vital or Radical Mistion or Temperament, in which the Constitution of every Sensitive Body is founded ; and though Augment and Decrement, as well as Nutrition, be of the Vegetative Spirit, yet it is also by this Elementary Mistion, which that doth Subordinate to itself, but cannot alter any Primigeneous Error therin, which is Naturally in it, though both Nature and Art may Cure Violent Accidents ; and though Nature doth of herself always intend the Best, as she did obtain it in this first Creation, when all things were made Good and Perfect, yet being now blasted, there is alway some Error, more or less, appearing therin ; and especially since the Flood, wherein the *Secula* were Abbreviated Extraordinarily by a farther Curs and Punishment of Sin : and yet also before, there were Natural Bounds sett by God in the very Principles of Generation itself, as well as he hath sett Bounds to the Matter and Body of the World. Now, wheras I say, that in Generation this proper Elementary Mistion and the Temperament therof is Governed by the Vegetative Spirit, I do not intend therefore that the Vegetative Spirit is first produced ; for as in the first Creation, so still the Elementary Spirits are before the Vegetative ; but I say that the Vegetative Spirit, which then begins to be produced, doth by and with the proper Mistion of the Elementary Spirits so begin to Operate and Contemper them ; and is, as I conceiv, that Operator or Motor therin, which is called *Punctus saliens*, and the Architect of the Body, and which being also Oeconomical and Periodical in itself, doth accordingly Govern the proper Mistion as Subordinate to itself. And wheras not only Elementary, but also in and with them Vegetative,

tive, and Sensitive Spirits, are Confounded and Coagulated in their *Chaos*, without any Actual Oeconomy, or Individual *Compositum*, all the Potential Principles therof are collected in the Seed, and prepared by the Generator; not only in Herbs, and Trees, which is sensibly Evident, and acknowledged by all, but also in all Sensitive Generation of Fishes, Fowls, and Beasts, which is denied or doubted by some; whereas almost every where in Scripture, not only the *Fetus* of Beasts, but also Children are termed the Seed of the Man, as well as of the Woman; and so were said to have been in the Loins of the Man, as well as to be in the Womb of the Woman: nor can the Woman Naturally Generate without the Man, any more then the Man without the Woman: And whereas it is Curiously observed, that no Seed appears in the Womb after Copulation, this indeed shews the way of Impregnation not to be, as hath been supposed, by the gross Matter of the Seed, appearing there as in the cold Air, but that it is more Colligated Attracted and Imbued, whereby the Womb is Imbued therewith, and so also with the Womans own Seed, and thereby she is Fecundated; and so is the Egg or Seed of the Hen by the Seed of the Cock; which, I conceive, appears Sensibly by the Procreation of Fishes, wherein the Seed of the Female being Ejected is Imbued by the Milky Seed of the Male Superinjected (and so is the Seed of Man said to be powred out as Milk) and also by the Wombs of other Sensitives, which thereby become more replete, moist, and lubricous; (as the Womb of the Earth is by Rain) and so the Female is said to Conceive the Seed of the Male: and as the Blood is the Life, or for the Life of the Generator, as I said, so the Seed is a Decision and farther Concoction therof in the Testicles; that is, not only of the Venal, and Arterial, but also of the Nerval Blood; as sensibly appears by Evacuation therof, which very much affects the Brain; when *Pythagoras* called it *Stilla Cerebri*; and Castration doth Effeminate and strangely alter the Habit of the whole Body. Nor is it more difficult to conceive how the Seed should so Imbue the Substance of the Womb Internally, and Impregnate it, and thereby the Egg, then how the Blood Venal, Arterial, and perhaps also the Nerval, (as it seemeth by the Seed) should Penetrate and Invigorate the Flesh, and other Parenchymes, and the whole Body. And heerby we may under-



understand how fallacious Sens and Experiment is, and not to be trusted alone, without the Harmonious Concurrence of Faith and Reason, even in Sensible things; for thus if we go never so little beyond the very Sensation itself we may soon be deceived, and unless we be very accurate, our Sens may deceive itself in the very Sensible *Phænomenon*. The Sensitive Spirit, as I suppose, is not produced as soon as the Vegetative, to which the Elementary are Immediately Subordinate, and therefore untill that be produced in some Embryonical Inception, there will be only an Elementary Mass: but the Vegetative Spirit beginning to come forth out of its *Chaos*, in and with the fitt Mixture which it requires and Governs, there appears something like a Life, which yet is only Vegetative; and though the Sensitive Spirit be also then latent in the same *Chaos*, and be ready to issue forth as soon as the Organical Body is Completed in all the Constituent parts thereof, though at first more Rudely and Embryonically; yet untill then, it doth not truly Live, nor Operate Sensitive with Perception and Appetite; which is therefore called, *The time of Life*; and accordingly, as is supposed, was the Judgment of Life or Death, for striking a Woman with Child, whereby she miscarried: but, as I said before, there is first an Operation of the Vegetative Spirit and Organisation of the Body; and so not only the Vital Heat doth Move the Liquor, by Rarefying and Impelling it, but there is also the *Punctus Salientis*, Regulating that Motion, and the Body Moved, by its Plastical Virtue; as when the Glass is heated in the Furnace, and thereby in Fusion and Motion, the Glass-man by blowing doth Effigiate it as he pleaseth; whereby he doth also Move it this way, and that way, according to his Art: and so doth the Vegetative Spirit Move that Rudimental Liquor Naturally by its own Plastical Virtue, whereby it doth Effigiate the whole Body, which cannot be without Motion: and so the *Systole* and *Diastole* of the Heart indeed are not Elementary Motions, but Vegetative; for Heat, the chief Elementary Mover, doth not Contract, which is the Motion of the *Systole* of the Heart, but Expand, which is needles therein, for the *Diastole* is the Natural Expansion of the Heart itself. Also it is Regular and Reciprocal, such as scarcely any Elementary Motion is of itself: for so though the Motion of Tides be Elementary, and also partly of the Matter, and *Pondus* thereof, in the Fall of the Water, first one way, and

and then another, as I have shewed; yet it is Regulated by the Course of the Moon, which itself also (as all Motions of Æthereal Bodys) is indeed Regular, but not Reciprocal; and I suppose these, and such like are Critical Symptoms of Vegetative Motions; and so, as I have said, Elementary Motion of itself is of Rarefaction and Condensation, and not of Expansion and Contraction, whereas there is a Contraction of the Heart in the *Systole*; though, as before, I conceive the Heat of the Blood and Elementary Motion thereof by Rarefaction and Impulse to be Subordinate and Subservient therunto, and that thereby the Pulse is more Vehement, and the Blood in the Veins Impelled; otherwise without any such Natural Instrument to raise it, (like Water by an Engine) as I have shewed, I do not well see how it can ascend in the Veins, but rather that both Concurrent Motions are needfull and requisite to cause the whole Blood in a Mans Body to Circulate about twelve times in an hour, as it doth continually; and plainly in Exercise and Contention, whereby the Body and Blood is heated, the Pulse is more quick, and less when it is Chilled with Cold: (and so Moisture applied to the Heart taken out makes it to Move again). And clearly these are no Sensitive Motions, because we do not sense them, as we do Expulsion and Retention, which are Vegetative by Expansion and Compression, as well as Sensitive, and Spontaneous or Voluntary, and so far we may perceive the Operation, but we know not how the Vegetative Spirit doth Expand or Contract by its own Specificke Power: and so the Sensitive, yea the Intellective Spirit of Man, though it doth Perceive whatsoever it doth itself, and how it Commandeth the Inferior Spirits, yet doth not Perceive how they do Obey and Perform; as, though I do very well Perceive that I do See, Hear, Move, or the like, yet I know not how these Operations are Performed in me by Vegetative, and Elementary Instrumentalities, whereof the first and most common is Blood, but Immediately and Principally the Nervous Blood, or *Succus*. Now whereas Physicians say, that there are three sorts of Spirits, Natural, Vital, and Animal, (which I confess I do not so well understand, or that there are any such Spirituous Corpuscles in the Blood which do Invigorate it) I conceive rather that it hath itself, and in its own Substance, all those Qualities which they attribute unto such Corpuscles; and which I shall so call Animal Spirits, or Spiritual Qualities, very



Pure and Powerfull, and the most Refined of any thing that is Elementary; and I suppose that they are so Prepared by the Vegetative Spirit, and are the most Immediate Instruments of the Sensitive Soul in all its Sensations; and so, as the Stoicks say, *Vincula Anima & Corporis*, whereby there is such mutual Conversation between them: for certainly by their Instrumentality we See, Hear, Imagin, Affect, and Move the Body Sensitive with Perception and Appetite: and so we find that the Brain, wherein they chiefly Reside, works, and grows hott, and that they are Exhausted, and must be at least every Night Recruited by Sleep; wherefore since plainly there are such Animal Spirits, or Spiritual Qualitys, Subsisting in the Nerval Blood, or *Succus*, I will adventure to inquire farther into them. And, as I said, this Nerval Blood, which hath passed through the Heart, and was there once before Refined and Subtilised, doth ascend into the Brain, and there is again Refined and Purified by the Concoctive Faculty of the Vegetative Spirit in another maner, and for other uses and purposes: wherefore the Brain is not so Calid, nor Motive, but more Cool, Moist, and Moderate, wherein the Vegetative Spirit doth Temper this Arterial Blood, Percolating it through the Meandrous Passages therof, and so Qualifying, and Concocting it, and producing the Animal Spirits, or Qualitys therein, for the service of the Sensitive Soul; as it doth Temper and Digest the other Blood, for Nutrition, and Augmentation of the Sensitive Body, and for Generation, and other such Inferior and Subordinate Uses: and from the Brain, as the Fountain, this Nerval *Succus* is diffused into the *Spina*, and Nervs, as the Streams: being indeed of a wonderfull Purity, and Vigor, whereby it hath not only Potentially the *Species* of Sensibles (as Extension hath all Figures in itself Potentially) which the Sensitive Spirit can call forth and Elicit; but also a very great Strength, which the Sensitive Spirit likewise Governs, like a well managed Hors, how and when it pleaseth. And certainly these are the most Spiritual Extractions, Powers, and Virtues, of Elementary Spirits, and the most Subtile and Sudden Artifices of Vegetative Spirits, and most like to Sensitive and Intellective Notions and Motions: and therefore the Immediate and most apt Instruments of those higher Spirits, and of their Operations; and which plainly discover the Combination between Superior and Inferior Spirits, as I shall shew heer-after.

after. And though I doubt, that heerin I may seem Novell and Curious, yet I shall shew how farr I satisfy my self concerning them, wherof I do thus conceiv; that this Nerval Bloud, or *Succus*, is, as I said, a most Refined Elementary Substance, prepared by the Vegetative Spirit for these Uses and Services of the Sensitive Spirit; and that as in the fower Elements, and their Miftion, there are Potentially all Sensible Qualitys, which are variously Actuated therin, and many of them very Momentaneously, as Light, Colors, Sounds, and the like, and so also Magnetike Virtue, and such other more Subtile and Pure Qualitys; and also their Irradiations and *Species* Abstracted thereby as Colorate *Species* by Light, and the like: so the Vegetative Spirit, at the Command of the Sensitive, doth By another more Spiritual and Platonical Virtue Actuate these Spiritual Qualitys, as it doth Corporeal Figure, and the like Affections of the Matter, and more Gross Elementary Qualitys, in Effigiating the Body, and producing that proper Miftion of the Elements, which it requires and Subordinates to itself; and also doth Extract some other Internal Emanations and *Species* therof, more Subtile and Pure then the External Emanations and *Species* of Colors, and the like, though not so Vivid and Permanent, but like Spectres and Ghosts of the deceased; both which the Sensitive Spirit doth also Irradiate, and thereby the Imagination Internally Contemplates them, when the Sensible Object is present, and also when the External *Species* depart and are absent. *Like unto a Man, who beholding his natural Face in a Glass, for he beholdeth himself, and goeth his way, and streightway forgetteth what manner of Man he was:* where are expressed or intimated, all the several Degrees of Purification and Sublimation of the *Species*; that is, both the Immediate *Species* Emanant from the Colorate Face to the *Speculum*, and the Reflection of the Image or Picture therof to the Ey of the Man beholding himself thereby, which I call External, and which when he goeth his way and departeth from them, do also depart from him; and so he forgetteth them, but still he hath some Internal Vision therof in his Imagination, which is by another Internal *Species*, as the Type of the former, or an *Umbra*, and as it were an Apparition, which very suddenly appeareth and disappeareth, so that a man Comparatively is said to forgett what he before beheld. Now certainly the External *Species*, either Direct, or Reflex, which are Emanant from the Face, and Reflected



from the Glass, when the Mangoeth his way and departeth from the *Speculum*, do no longer continue in his Ey, or Optike Nervs; for it was the *Species* of the Colorate *Superficies* of his Face, which is Emanant Directly outward, and was Reflected toward the Ey only by the Glass; and when he removes his Ey from the Glass, that Reflection to the Ey ceaseth, and then it is as if any other Directly Visible Object were removed from the Ey, whereby also the *Species* Emanant from it, and Subsisting in it, are removed, and so the Vision ceaseth: and yet there is such another Internal Vision by the Imagination, as I have shewed, and every Man may sensibly perceiv in himself; though, as the Scripture very Curiously intimateth, he hath a weaker and shorter representation of his own Face, wherof he beholdeth only the Reflected Image in a Glass, then of the Face of his Wife or Child, which he beholdeth Directly and more Immediately. Now certainly the Imagination cannot so behold Internally without some Internal *Species*, as the Ey cannot see External Objects without such an such an External *Species*: and this Internal *Species* is not any such Image of the External, as that which appears in the *Speculum* by Reflection is of the Direct *Species*, but another thing Separate from it, when the Object, and all the Emanant and Reflected *Species* therof Subsisting in it, are absent and wholly removed; and of another Nature farr different from the former; and more spiritual and Phantastical, and Transient as Thought; nor can it Subsist in the Imagination itself, which is a Sensitive Spirit; becaus this is the *Species* of some Sensible Quality, which is Elementary; and so are all the *Species* therof, whether External, or Internal; nor is it so Actuated and produced as they, by any such External Irradiation, as Color, or by any such Motion as Sound, and the like; but only at the Command of the Imagination, which being a Faculty of the Sensitive Spirit, and such Contemplation of External Sensibles by these Internal *Species* not being performed without them, nor by any Intrinsic and Specific Power of the Imagination alone: therefore it must be, as I conceiv, by the Mediation of the Vegetative Spirit, which first prepares this Elementary Substance, or *Succus*, wherein they Subsist Potentially, and when the Imagination calls for them, doth Actuate and produce them; and so when the Imagination doth Animate, it doth Irradiate them by its own Light, as I may so term it, which is yet more Spiritual, and Sensitive; and thereby doth

doth so Contemplate all Sensibles in such little Types and Images (wherin they are Pictured in Small) and so very Subtile and Spiritual, which is indeed very admirable: and so also is Sensation by the External *Species*, which in the Ey and Optike Nervs are very strangely Contracted and Subrilised, as I shall shew heerafter. And now proceed from these Spiritual *Species*, which are the Instruments of Imagination or Speculation, to consyder those Spiritual *Potestates*, which are the Instruments of Appetite, and Spontaneous Motions; and these also may be in the same Nervs, and Nervous *Succus*, together with the others, for so all the Nervs are generally Tactive as well as Motive; and this sufficiently convinceth me that they are neither of them any such little Corporeitys, as is supposd, which cannot probably be together in such little Cavitys without disturbing and disordering one another; wheras clearly such Spiritual Qualitys may so Subsist together in the same place and not to be Confounded, or Mist (as two Lights) and so though they be Heterogeneous and of different Natures; as Light and Heat (which heerin are somewhat Analogous to these two Spiritual Qualitys in the Nervs; that is, the Perceptive as Light, and the Motive as Heat) yet they may well consist together. And as the *Species*, which are the Instruments of Perception are, as I said, of an Elementary Nature, so more manifestly are the Motive Spirits, which are sensibly excited by Heat, and dejected by Cold, though they be both in themselves farr more Spiritual and *Aethereal* then these common Culinary Qualitys of Light and Heat; for, as I have said, these Motive Spirits are such and so prepared, that they Move not at all; but are in their Potentiality as the others, untill the Appetitive Faculty of the Sensitive Spirit Command them; and then the Vegetative Spirit, which by its Plastical Virtue did prepare them for this purpose, doth Immediately *Actuate* and produce them; and so they, like Gunpowder Incensed, suddenly and strongly Move the Body; and yet no more or any other parts therof, nor in any other maner, then according to the *Imperium* of the Sensitive Spirit, and the Specificke Power therof; which is the first Mover itself; and doth so Move them, as the Imagination doth Contemplate the *Species* *Actuated* and produced by the Vegetative Spirit; though the Motion of the Body be Immediately by the Vegetative Spirit, and Motive Animal Spirits themselves; as the Immediate Representation.



sensation is by the *Species* : and so I conceive that the Sensitive Appetite also Moveth these Motive Spirits, not as a Coachman doth Exhort his Horses only with his Voice, but as he Governeth them with the Reins, whereby he guideth the Coach, and causeth it to go this way, or that way as he pleaseth, though it be Immediately drawn and Moved by the Horses, as the Body is by the Vegetative and Animal Spirits: and this is the Gubernation that I intend, whereby the Superior Spirits thus Govern the Inferior, that is, not only by a bare *Imperium* or Command, but a Spiritual and Superior Motion, which I call, *Gubernatio*, or Guiding, respectively according to the several Natures of the Motions; but alway according to its own Nature, and the Specificke Powers therof, that is, Spiritually, and Sensitive with Perception and Appetite, and not without them. Thus when the Sensitive Spirit would Imagine, it Commandeth that such Internal *Species* be Actuated and Produced, which it also, as it were, dictateth and calleth for what it would have, and itself also Irradiateth and Contemplateth them; and though, as I have shewed, they are indeed of an Elementary Nature, Prepared, Actuated, and produced, by the Vegetative Spirit, yet the Performance is so Consentaneous, that we are apt to think, that our Imagination doth Create all its Phantasms in itself, and of itself; (as Poets are so Poetically termed Makers). And so when it would Move the Body it not only commandeth that the Motive Spirits be Actuated and produced, or that, as I said, the Horses be made ready, but it also by a Superior Motive Power Guideth and Governeth them so Spontaneously, that we are apt to think that our very Soul doth Move the Body Immediately by its own Impuls of the Appetite and Will, and without any such Instrumentality of our Vegetative, or Elementary, Motive Spirits; which yet we must acknowledg, since we plainly perceiv, that if there be any defect in them, the Operations of the Soul are also defective; yea many other very Curious Artifices and Motions of these Inferior Spirits in our own Bodys, (that is, such as be not so Immediately Subservient to the Sensitive Operations of the Imagination and Appetite) are performed without the Imagination or Appetite; as Nutrition, the Motion of the Heart, and the like; which we therefore call Involuntary, becaus therein the Vegetative and Elementary Spirits do not Ordinarily attend the Command of the Sensitive

Sensitive Spirit, nor are Governed thereby. Yet also, as they are such proper Inferior Spirits Subordinate unto it, and Conjunct with it in the same *Compositum*, so there is, as I said, and shall now shew, a very notable Combination between them; which may plainly appear by many Extraordinary Effects, and such as may strangely vary and alter them: thus, as I have formerly observed, Mirth helps Digestion, and is as it were the Nurs of Nutrition, whereas the Sorrow of the World worketh Death: and these Sensitive Affections not only caus several Motions of the Blood, and Alterations therein, but also in the very *Systole* and *Diastole*, and Palpitations of the Heart; and, which is yet more Notable, in the very Generation of another *Individuum*: and not only the Motive Power of the Appetite, but also the Imagination itself doth strangely Operate heerin; as we commonly say, Conceit may do much; that is, concerning any thing which is Internal, either in our Mind, or Body, yea in the very *Fœtus*, while it is in the Womb, and Nourished by the Parent, and is yet as it were some part of the *Compositum* therof; especially while it is more Young and Tender, and more capable of such Impressions; but chiefly in the very Act of Generation (which *Jacob* knew, or was Supernaturally taught and assisted by the Angel, who appeared to him) for as it grows more Perfect in itself, and is neerer to Exclusion, it becomes more Separate from the Parent, and another *Compositum* in itself, and more firm and strong, and so less capable of Impressions by another: and thus I conceiv, that the Imagination or Appetite of the Father doth not Operate upon the *Fœtus* in the Womb of the Mother, nor of an Hen upon an Egg Excluded, whiles she Incubates, and is hatching it. But the most wonderfull thing is, how the proper Vegetative Spirit of any Sensitive *Animal*, by the Command or Intimation, of the Sensitive Imagination and Appetite, so Fansying and Affecting some other Vegetative thing, should Actuate and produce in the *Fœtus*, not only Signatures therof, but also somewhat of the same Vegetative Nature: as I have been very credibly informed of a Person, whom I well knew, and have often seen the Mole on his Chin, which was said to have been caused by a Cherry thrown at his Mother, while she was Pregnant of him, in a Frolike among Ladys who were then eating Cherries; that every year in the Season when Cherry trees begin to budd, the Mole began to budd, as I may say, and



so ripen more, and at last put forth some little Tusks, and be very angry and troublesome; and then again, as the Season of Cherrys departed, to decreas likewise, and be less sensible; whereby it did plainly discover something of the Cerasine Nature, Inoculated as it were into the Body of a Man. Wherof I know no other account to be given, but only this Combination and Cooperation of the Sensitive and Vegetative Spirit: and though, as I have shewed, there is no Universal Spirit, or *Anima Mundi*, from which such particular Spirits may be derived and produced in any Bodys whatsoever; yet it is truly enough said, *Omnia Animarum sunt plena*, if it be rightly understood; that is, as in the first *Chaos* the Spirits were latent in their proper Elements, out of which they were produced in the Six Days, so still there are Æthereal, and Aereal, Spirits in Æther, and Air, out of which Comets, and the like Æthereal, or Aereal, Meteors may be produced; and so the Terraqueous Globe, or the *Cortex* thereof, is Pregnant not only with the Elementary Spirits of Water, and Earth, but also of Vegetative and Sensitive Spirits, which while they are therein, as in their *Chaos*, are dispersed and diffused, and so Confounded as in a *Coagulum*, Inane, and Inform, that is, without any Oeconomy, or Individuality, which is afterward Actuated and acquired by Successive Generation still producing them according to the Archetypes or *Protoplasta* of Original Generation Instituted in their first Improper Creations, as I have often mentioned: and though they cannot always attain their Regular Perfections according to the Law of Nature, yet there may be several Degrees thereof to which they may arrive, and so their productions be more or less Anomalous or Monstrous, by reason of many Obstructions and Defects: wherof the greatest is the general Curs of Nature for the Sin of Man; so that now indeed, both he, and all this Spectable World, which was given unto him, and all things therein, have some Monstrosity in them; and there is now none of them exactly Perfect according to the first Instituted Law of Nature, but all are Heteroclitically Redundant, or Deficient: and though we take less notice of others, yet some are so misshapen, that we Eminently term them Monsters; and others such Imperfect Inceptions, that we hardly discern any thing of the Specificke Nature therein: and such I conceive this Cerasine Meteor, as I may so term it, in the Body of Man to be;

be; whose Cerafine Spirit, though the *Compositum* therof was Corrupted by Eating and Conversion into the Nutriment of the Mother, and consequently of the Child in the Womb, yet was latent in the new *Compositum* Generated by that Corruption; and that by the *Imperium* and Impression of the Mothers Imagination and Appetite working on her proper Vegetative Spirit, and that on its own Nutriment, the Cerafine Spirit was Equivocally, and very Rudely and Imperfectly produced; For thus, as I have said, the Vegetative Spirit doth Actuate and produce Elementary Miftion, Qualitys, and *Species*, as Subordinate and Subservient to itself, though Classically different; and so it may also Imperfectly produce another Vegetative Spirit, which is of the same *Classis* with itself, as well as one Spirit of the same *Classis* may, be Mift with another; and thus I conceiv, that as there apparently is an Individual Oeconomy in every particular *Compositum*, so also a Specificall and Classicall Polity, Subordination, and Combination of several Natures, especially in the same *Compositum*: and that thus the Sensitive Spirit by its own Specificke Facultys doth Command and Govern its own proper Vegetative Spirit, which also by its own Specificke Powers doth Serv and Obey it; and likewise Order and Govern the proper Elementary Miftion that it requireth, which accordingly doth Serv and Obey it Naturally, with all Suavity and Facility: And thus as the Imagination doth more Spiritually and Sensitive Irradiate the *Species*, whereby it doth Perceptively Contemplate them; so the Appetite doth also Sensitive enliven the Spirits, whereby it doth Spontaneously Guide and Govern them without any Violence or Reluctance; unless their happen some Distemper and Disorder among them: and I suppose, that as there are these Confederacys and Combinations between Spirits, according to the Scale of Nature and Oeconomy therof, so also there is a Subordinate Approximation, though no Participation, Communication, or Confusion, of their different Natures; and that the proper Vegetative Spirit of any Sensitive *Animal* is farr more Excellent and Spiritual then of any Grass, Herb, or Tree; and of Superior Sensitives more then of Inferior; as of Fowls more then of Fishes, and of Beasts then Fowls, and of Man then any others: and so also that the proper Elementary Miftion which is Subordinate to Vegetatives, is more Excellent and Spiritual then any



other Elementary *Mistum*; and of Superior Vegetatives more then of Inferior, and so of the Vegetative Bloud which is the Instrument of Sensitive Life, as I have shewed, then any others whatsoever.

III. Having thus largely discoursed of this very Curious and Mystrious way of Sensation generally, whereby to make way for the Explication of the severall Kinds of particular Sensations, I shall now also proceed to discours therof, and thereby to Confirm this general Doctrine of Sensation. The Senses are particularly Five; though they all Subsist in the Imagination, which is seated in the Brain, as I shall shew heerafter, but they are rightly thus distinguished, becaus they are Really severall in themselves; for Oysters, and some such Imperfect Sensitives, have some of them, and not others, which they want not only Actually, but also Potentially; so that an Oyster may be no more termed Blind, or Deaf, then a Stone: and thus, though in every *Classis* all the severall *Species* of that *Classis* have such Generical Spirits and Qualitys, as Denominate and make them to be of that *Classis*; as Oysters have Sensation generally, and therefore are Sensitive *Animals* Generically as well as Beasts, or any most Excellent Sensitive; yet their proper Sensation is Specificall, and Specifically different; as every Grass, Herb, and Tree, is Vegetative, and yet every one of them, and every kind therof, hath a proper Specificall Spirit, and Qualitys; as apparently they have their Specificall Plastical Virtues, which do so severally Effigiate them, and the like: and so also have Sensitives, so farr as they are specifically different, their severall ways or maners of Sensation, as may also appear by the severall Formation, Quantity, and Quality, or Temper of their Brains, and Organs; as the Eys of some Insects are not Movable, and then they are Multocular, as well as many of them Multipedous; and Biocular *Animals* have also their Eys of severall Figures, and Coats, and Temperatures; and thus there are some such Generical Differences which vary the *Classis*; and they are greatest and widest, as Intellective, Sensitive, Vegetative, and Elementary; and some that vary the *Species* more or less Subalternately, as Fishes, Fowls, and Beasts; and of Fishes, Oysters, and Whales: and accordingly their Specificall Differences are more or less, but all less then Classically

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Generical; and some that only vary the Individuality, as the particular Individuality and Oeconomy of every *Compositum*; among which also there may be More or Less of the same Specificall Qualitys, but such as doth not vary the *Species*, and therefore is least of all; as *Myopes* do not see in such manner as others of the same *Species*, and yet their Sight is Specifically the same with other mens Sight. And thus, as I have said, nothing of any one *Classis* doth, or can, partake of that which makes a Classicall Difference in others; for then they should not Classically Differ, nor any of one *Species* of the Proper Specificall Difference of another, nor any one *Individuum* of the Individuality of another, otherwise they should not so Differ; nor of the Differences of their Spirits and Qualitys, whereby only we can know them, otherwise we could not so know them, nor affirm them to Differ: but contrarily every *Individuum* doth partake of the Specificall Difference, and every *Species* of the Classicall Difference therof; otherwise they should not be of the same *Species*, or *Classis*. And thus the Senses are more Generically Five, and may be more Specifically as many as there are several *Species* of Sensitives, as well as they are Individually as many as there are several Sensitive *Individua*. And whereas they are so said to be Fivefold according to their Fivefold several Organs, that is, their External Organs, Eys, Ears, and the like, which also the Scripture doth often mention as such, generally and Comprehensively (as it doth deliver almost all things of Natural Philosophy in that general manner, according to the first System therof, and leav Particulars to our farther Search and Study); yet if we farther Inquire into them, we shall find that the Nervs, and Brain, and Elementary Qualitys, or Animal Spirits therein, and the Proper Vegetative Spirit, and Virtues therof, are also Internal Organs, that is, Instruments of Sensation, as well as Eys, and Ears, and the like Corporeal Organs, which are External: and indeed the several Organs do not make the Senses several; but rather the several Senses do require such several Organs: for the Corporeal Organ of Taſt is the whole Body, or all the Nervs, which are Tactive, and every Organ of the fower other Senses must have Taſt or Feeling, which is the Sens of all Senses, as the Organ therof is the Organ of all their Organs; and so is the Object therof, which we therefore call the fower first Qualitys (though otherwise they are



not first more then others, as I have shewed); and wheras the Objects of all the other Senses are Compounded of some such other first Qualitys, and probably cannot Exist without some first Mixture of these sower first Qualitys also, as Subordinately and Fundamentally requisite in their Composition, though they are not Immediately Compounded therof: so likewise the Object of this Sense, as it is in itself, is not all, or any of these sower first Qualitys severally, but a Mixture or Composition of them, as well as the Objects of all the other Senses are Mixture and Compounded of their several Principles: for indeed any of these sower First and Simple Qualitys are too Vehement Sensibles, in themselves which would destroy the Senses, yea and all Sensible things, and one another; and therefore, as I have said, never Exist Actually without such a Mixture, as their Elementary Spirits were so Mixture in the three first Days, before which no Vegetative or Sensitive Nature could be produced, and so must continue as long as this present Nature, and from the Original Generation unto the Final Corruption therof. Also all the Organs, both External, and Internal, do require the Vegetative Spirit, and Virtues therof, Plastically to Form them, and Temper their Elementary Qualitys, and also to Actuate and produce their Animal Spirits, as I have shewed: and this I conceive to be the very Organism of all the Organs of Sensation, and Instrumentalitys of the Sensitive Spirit, wherein as Taste or Feeling is Ingredient, as I said, so it is in itself the Fundamental, and least Fallible, and as it were Corporeal Sense; yet Contact of Bodys, (as it is said, that nothing can touch or be touched but only Bodys, and so indeed there must be a Contact of all Bodys without any Discontinuity or Vacuity, as I have shewed) which is Corporeal, and Taste which is Spiritual, do very much differ: for so Heat by its Emanant Rays may be felt at a very great distance without Corporeal Contact, as well as Light, or Color, may be so seen; and yet it is also true, that as no other Operation, so also no Sensation can be without Contact Corporeal or Spiritual. Now wheras all Sensation is performed in the Brain, it is somewhat strange to conceive how any Sensible Object, yea the most Pure and Spiritual, should arrive thither through all the Body, and the Nerval *Succum*, and all the Meandering Passages therof; which certainly is not by the Bodys therof,

therof, that can not so penetrate and pass, and if they should, would rather disturb and confound the Brain; nor by any *Effluvia* therof, which are also Bodys, though more Rare and Subtile; nor only by their Emanations, for not only Savors, and Olores, which are Effluent, and Light, and Heat, which are Emanant, but Cold, and Drines, which are not Effluent, nor yet discovered to be Emanant, or very little, are Sensed; and so also Sound, which certainly is neither Effluent, nor Emanant, but Transient: but the Sensible Objects cause Sensation by Actuating their like Qualities in the Body, or some fit and Immediate Standard therein, as I shall now shew, and not by Motion and Puls of the Brain, as I shall shew heerafter; nor by any such Gross and Corporeal Contact, or less Spiritual way, but such as is the most Pure and Spiritual, wherof any Elementary Nature is capable, that is, by those very wonderfull Animal Spirits in the Nerves, as most Similar and fit Instruments of the Sensitive Spirit, and which, as I conceive, are severally prepared in the several Nerves by the Vegetative Spirit, that doth so Effigiate and Qualify the External Organs, and also these Internal Instrumentalities, whereby all the Nerves are furnished and instructed with their proper Spirits; and then the External Object or *Species* therof Operating upon the Standard by Univocal Generation of like Qualities, and they touching upon the Nerves, do Irradiate, Excite, and Actuate them; whereby they having the Types therof alway Potentially in themselves, like a Needle touched with a Magnet, are suddenly, but not Instantaneously as is supposed, quickned, and enlivened as it were, from that very Contact to the Brain. And this is evidently seen in Juglers Feats of Activity, as they are called, being so very quick and nimble, that they will throw a small black Ball out of one hand into another before your Eyes, and yet you shall not see it: and so in the common Experiment of a Firestick moved swiftly round, which seems to make a Firewheel or whole Circle therof, though certainly the Stick be only in one and the same Point in the same Instant: wherefore as the Emanation of Light and Color, though it be most swift and Momentaneous, yet is not Instantaneous; so much less the Sensation of Sight, which requires sometime, for the *Species* not only to pass from the Contact to the Nerve, but also to Irradiate and Excite the Animal Spirits therein; which plainly are so Excited



and Actuated thereby in the Nerve, becaus when the Firestick passeth away from one Point to another, yet the Ey seeth it in that Point from which it hath passed, untill it return thither again through the whole Circle; whereas the Emanant Ray of the Light of the Fire always is, and passeth away Simultaneously, with the Inherent Light in the Body of the Firestick: and therefore the *Species* in the Nerve, while it is newly Irradiated and Actuated, is more strong and vivid then afterward: but the Ray being past and gone, the Vision cannot be Immediately by that, but must be by something more Immediate, which, as I suppose, can be none other then what I have assigned; that is, the Irradiating Actuating and Evoking of the Visive Animal Spirit, and the like *Species* therein by the Sensible *Species*; as the Sun by Illustrating the Moon doth Actuate and Evoke the Native Light which is Potentially in the Moon itself, as I have shewed: and this Sensation of the Senses, which is by the Instrumentality of the Sensorious Nerve, is that first Sensation, wherof I discoursed before, whereby a Man seeth another Man Directly, or his own Face in a Glass Reflexively; and which is therefore so Bright and Vivid, becaus the Irradiation, and Actuation is Immediately by the Contact of the Real Sensible itself; whereas the other, that is by Imagination or Contemplation of Phantasms in the Animal Spirits in the Brain, is but as a Spectre or Apparition in respect therof, becaus it hath no such Irradiation by the Object itself, but is only Actuated by the Vegetative Spirit, and then Irradiated by the Imagination, as I conceiv; becaus as the Sensitive Spirit cannot Immediately Consubstantiate the Elements without the Mediation of the Vegetative Spirit, so neither can it Operate without the Mediation therof: for as things are in Being, so they are in Operation; as plainly the Intellective Spirit of Man in this Conjunct State cannot Operate without the Mediation of the Sensitive Spirit; and so of the rest, according to the Scale of Nature. Also I conceiv that whereas this Operation of the Senses, which is by Elementary upon Elementary, that is, of Sensibles upon the Animal Spirits, is by Immediate Contact of the Sensibles; and so Light enters into the Ey, and Sound into the *Tympanum* of the Ear, and Odors into the *Nares*, and Savors into the Substance of the Spongy Tong, and the Flesh and whole Temper of the Body is the Standard of Feeling: for  
unless

unless we do admitt Emanations of Cold, Moisture, and Drines also as well as of Heat, I cannot conceiv how the Object itself and the Tactive Nervs can come together, whereby there may be any Contact between them, without which certainly there can be no Operation; for when I touch a Cold Stone with my Fingers ends, or other part of my Body, there are some Cuticles, if not Flesh, between it and the Tactive Nervs; so that there cannot possibly be any Contact: nor can the Inherent Cold in the Stone pass through the Pores unto the Nervs any more then the Stone itself, in which it is Inherent: and though it is true, that if a very fine Linen Cloth be girt hard and smooth about a polished Agat haft of a Knife, and a live Coal laid upon the Linen Cloath, it will not easily burn it, being defended by the Cold Agat; and so there may be some such short Emanations of those Qualitys, which are therefore less noted, then of Heat, and Light, and the like, which are so longinquous, and thereby more notable; yet I conceiv that the Immediate Contact is between the Flesh and Nervs. And it is to be observed, and well examined, what others affirm, that there may be Motive Animal Spirits, and yet no Tactive Spirits in the same Nervs; and there are Historical Instances of some such men who could work with their hands as well as ever, and yet not feel, though they were pinched, pricked, or cutt; which I cannot deny, according to my former *Hypothesis*: for so I suppose, that several Animal Spirits being only Spiritual Qualitys, may be in the same Nerval *Succu*, and Substance, *per omnia*; and therefore also one kind therof may Actually be without the other, (as Actual Heat without Light); but then I suppose, that the Sens of Feeling being Fundamental, there cannot be any other Sensorious Organ and Nervs in the Body of any such man, without it, as the Eys, Ears, *Nares*, Tong, and the like. And it is also to be Inquired, whether in such a Body the Flesh, which is the Standard, be not mortified or benumbed? and then there can be no Sensation, though the Tactive, as well as the Motive Spirits, be sound and perfect in the Nervs: and the constant Temperament of the Flesh, though it be also a Mixture of the fower first Qualitys, is not felt, becaus it is so Equal, and Natural, that it is also suitable to the *Crasis* of the Body, and likewise of the Nervs, and Tactive Spirits therin, and so doth not Offend, or any way

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Affect them, whereby there should be any such Feeling thereof, as when it is any way Distempered; and as we feel any Excess of Heat, Cold, Moisture, or Drines, in the Flesh itself, so if any other Tactible Object, which is External, be Unequal and Excessive in any of those Qualities; or otherwise not in every respect of all other Sensibility such as is in the Flesh itself, it doth more or less Offend or Affect it whereby it is felt; and so the Temperament of the Flesh is the Standard, which is varied by the Univocal Generation of any such Sensible Qualities therein, which Immediately touch upon the Nerve, and from that Contact, and Irradiation of the Animal Spirits in the Nerve, the Sensibility passeth to the Brain, where the Sensation is performed. Thus Sens, which is itself a Spiritual and Living Faculty, requireth its own more Immediate Standard, and most Refined Spiritual Qualities, or Animal Spirits, and the Spiritually Plastical Virtue of the Vegetative Spirit, in the spiritual Operation of any Sensation; as I have shewed in this Sens of Feeling (which is most Gross, and more Corporeal than others) and shall farther shew in all the other Senses, and their Sensations. The next Sens to Feeling is Tasting; which therefore some have supposed to be only another manner of Feeling; and it is indeed by Immediate Contact between the Sapid Juice and the Tong, which hath also a *Saliva*, that is, the Standard thereof, being in itself Indifferent to any Sapor, but when it is Infected by the Sapid Liquor doth convey it to the Gustative Nerve, whereby the Sensation is performed, as I have shewed: Yet certainly, as Sapor is a different Sensible from all or any of the fower first Qualities (though there be some Mixture thereof in the Juice, that may be felt by the Organ of Tasting, which is also Tactive, by another Sensation) so is Taste a different Sens from Tact: and though all the Body doth Feel, yet it doth not therefore Taste, but only the Tong, or Palat, and this Sensation is most Sensitively and exactly performed by the *Cusps* of the Tong, where the Gustative Nerve meet together; as the Tactive do in the Fingers ends of a Man, or Tail of an Eel: and in the whole Tong there is as it were a Source of Moisture, keeping it alway Moist, and ready to issue forth, to temper any Dry, and convey any Actually Moist Sapor to the Nerve: and if the Sapid Meat or Drink be not in the Mouth, but distant from it, yet the Appetite doth stir up Salivation,

livation, which is prepared to receiv it : whereby we may observ that Combination and Confederacy between severall Natures which I have often mentioned, and which is indeed the true Sympathy, and the contrary therof the true Antipathy in Nature. The next Sens is Smelling ; which also is as like to Tasting, as Odor, which is the Object therof, is like to Sapor, which is the Object of Tasting; and as Sapor is in the grosser Liquor, and Odor in the Vapor, so I suppose, that there is some Inodorous Vapor in the *Nares*, or Mammillary Processes, which is the Standard of this Sens of Smelling, as the *Saliva* is of Tasting ; though it is more Subtile, and not so Discernible : and though perhaps the very Body of Vapor may pass into the Brain, and though also Sensation be, as I said, in the Brain, yet I do not conceive that there is any Smelling thereby, and more then when Odorous Vapors descend into the Stomach, but that this Sensation also is performed like all the rest ; that is, the Odorous Vapor entering into the Tonell of the *Nares*, and passing thereby to the Mammillary Processes, is there mett and received by some such Mammillary Vapor or Exudation, and so conveyed to the Olfactive Nervs therein, and thereby to the Brain, where the Sensation is performed, by this way only, and not by the other without it. Nor are the *Nares* the Immediate Organ of Smelling, but only the Tonell, as I said, to convey the Odorous Vapor to the Mammillary Processes, which are the very Organ therof ; as all the Senses, except Feeling, (wherof the Organ is the whole Body) have, besides their severall External Organs, such *Atria* or *Avenues* to conduct the Sensible unto the Sensorious Nervs. So the Mouth is a Cavern, and the *Nares*, as I said, are a Tonell, and the Ears. Anfractuons Passages, and the *Uvea* hath a *Foramen*, beside the Spherical Figure of the Ey, which causeth the Rays to Converge toward it. Also it is observed, that as Vegetative Nutrition is performed in the lower Coquine of the Stomach, so Sensation is in the *Capitol* of the Brain ; and the Organs of the Superior and more Excellent Senses are higher and neerer to it. Thus Feeling is principally by the Fingers, and the Tong is higher then them, and the Mammillary Processes above that, and the Ears above them ; and the Eys above them all. Also the Ears are double ; not only as the *Nares*, which are Bipartite (having a Bridg to strengthen them being such a Prominent part, and chief Ornament of the Face, and both their *Foramina* meet again above it)



but standing asunder on each side of the Head, to receive Sound, which is Circumferentially diffused: And so there are two Eys, to receive Light and Colors: and this double provision is made for these two Scientifical Senses, so as their Sensations may be performed by one alone without the other, though not so completely; for as by shutting one Ey, and contracting the *Uvea* of the other, we see more distinctly, so we see less of the Object in Latitute; and common Sight is by both Eys together; so that if an Object be placed at the tip of the Nose, you cannot well see it with both Eys at the same time; becaus both of them moving together, as one turns toward it, the other turns from it; whereas, if the Object be more Remote the Rays come more equally, and less transversly, to both the Eys. Yet though Hearing and Seeing be such high and noble Senses, they are not performed in the Brain only, like Imagination, and Appetition, but have their more External Organs, and Standards: for so Hearing needeth Ears; and there is also an *Aura* in the *Tympana*, which is a Pure, Calm, and Silent Air, included in them, wherunto the External Sound approaching, doth propagate an Internal Sound in it, as in the Standard (wherin all Sounds were before Potentially, as well as in the open Air) and the Sound is Spiritually propagated in it, as in the open Air, as I have shewed; and not by any new Collision or beating on the *Tympana*, as hath been supposed. And so Sight hath not only its External Organs, the Eys, (which have a very quick and tender Feeling, and are very curiously composed) but also a Standard therein, as I shall now shew. Certainly Sight is not by any such Intentional *Species* Emitted, as the Antients supposed; for the Eys, as well as the Organs of all the Power other Senses, are made more fit for Reception then Emission; and the Light, which doth Irradiate the Colorate Object, doth manifestly with its Reflected Rays bring back the Actuated *Species* thereof to the Eys, and so Intromitt them; and therefore there is no need of any such Extramission; though indeed in Seeing we seem to see the Object Outwardly, where it Really is, rather then Inwardly, where it is not: which, I suppose, was the ground of that Error: whereas it is the Sens within, which doth behold the Object without, by Conjunction of both the Internal and External Lights, as I shall shew afterward. Wherefore others considering that the External Light doth penetrate the whole Ey,

Ey, even to the *Retina*, and *Fundus*, have perswaded themselves that the Vision is there performed: but then we should see *Visu Inverso*, Backwardly, and not Forwardly, as indeed we do: and becaus the Rays do Intersect in the Ey above the *Fundus*, wherein they are Inverted, we should see the Image of the Object *Situ Inverso*, as indeed we do not. But I conceiv the true maner of Vision to be both by Intromission of the External Light, and Extramission of an Internal Light, meeting therewith in the Ey, though not passing out of it; whereby the *Species* of the Object is doubly refined, that is, first by the External Light Irradiating it, and Abstracting from it the Colorous *Species* (which are not Emanant of themselves, nor Sensible, as Emanant Heat, but must be thus first Purified and Abstracted by the External Light) and then again the Internal Light in the Ey meeting it, and being Irradiated and Affected thereby, as the Standard of Sight, hath its own Potential *Species*, which are yet more Pure and Spiritual, Actuated in itself; as well as in the Standards of all the other Senses, as I have before shewed. And this meeting or Conjunction of both these Lights, is, as I suppose, in or about the Crystalline Humor, which Physicians rightly term, *Speculum Oculi*; though we do not see the Image therein Reflected from the *Retina*, and *Fundus*, where it is Inverted; for then again we should see it Inverted: but we see it foreright and Direct, according to the Refracted Rays of the External Light Intromitted, and Extramission of the Internal Light, there meeting with it, as I have said; as when we look through Perspicills or Spectacles: and though indeed in a *Speculum* which is Plane or Convex, as the Crystalline Humor is, we see the Reflected Image foreright and Direct, according to the Natural maner of Vision; yet we see it as the Object itself is, and not Inverted, as we should by such double Reflection, as I have shewed: and such double Reflection would too much weaken the *Species*, and hinder Vision. Now that there is such an Internal Light, which being Incolorous in itself, is the Standard of Sight, as I have said, is acknowledged by Physicians, who call it the Bright Spirit of the Ey, which though in a dead Ey it be extinct, and doth not appear, yet is manifest by the great difference heerin between a living and a dead Ey: and you may easily deprehend it in your own living Ey, by depressing and distorting the Vitreous Humor in the hinder part therof.



whereby you shall perceiv a Golden Ring of Light, with a dark *Meditullium* in the midst therof; which will not so appear by depressing and distorting the Aqueous Humor in the forepart of the Ey, wherein this Internal Light is not, but in the Vitreous Humor; which is next to the Optike Nerve: and by such depression and distortion, as also by any great blow upon the Ey, it is Conspissated, and rendred Visible; yea the Sun, or any vehement Lucidity, if you behold it long, will so Irradiate and Actuate the Internal Light, that it will not soon be extinguished afterward: which also plainly shews, how External *Species* of Sensible Objects may Irradiate and Actuate the Internal, as I have said, so as they shall continue some time after the Objects themselves, and their *Species*, are removed. And the dark *Meditullium* is the Crystalline *Lens*, which by such depression and distortion of the Ey is rendred Visible, though otherwise it be only the *Diaphanum* of the External Light, and as it were a *Speculum* to the Internal Sight. Having premised this *Hypothesis* of the most Natural and Direct way of Vision, I recommend it, as I do all others, to more Exact and farther Examination: and as I have formerly presented Optike, as a very Scientifical Study, or Philosophical Light, I shall heer transgress the bounds of a general System, in some more particular Observations, and Physical Conceptions therof; becaus indeed I find Optike so much mistaken by others, and made a particular Mathematical Science; though it be no more Mathematical, then Astronomy; which certainly is distinct and very different from Geometry, or Uranometry, which is only assistant and subservient unto it. So though Actinometry be assistant and subservient to Optike, becaus the Rays from Point to Point pass, as I have said, in most direct Mathematical Lines, yet the Inflection therof at the Points, either by Refraction, or Reflection, which is properly Optical, is purely Physical and Spiritual; and not so well understood, and therefore commonly pretermitted: but though the Spiritual Nature therof be very various and may seem to be contrary; yet that is from contrary Reasons, which, if rightly understood, will be found most Regular and Proportionable in that very variety, and contrariety. The Light, which is not Corporeal, but Spiritual, as I have shewed, is *Actus Visibilis*, & *Diaphani*; and is Naturaly of itself Emanant from the Center of Inherent Light to the Circumference of the Sphere of Emanation.

Emanation; which is the Sphere of its Activity; but by some contrary Opacity in the more or less *Opacum*, or *Diaphanum*, is more or less Reflected, or Refracted: Yet the Air, which is the Natural *Diaphanum*, and *Medium* of Sight, causeth very little Refraction, and no Visible Interfection of the Rays; as I have observed of fower several Colors from fower several Walls of a Room; crossing one another, which yet are seen in any Point of the Room severally and distinctly, without any Visible Interfection, and Inversion, or Confusion thereby; such as appears in it afterward through Water or Glass, and the like, which are no Natural, but Artificial *Media* of Sight; and in both we see not by any Intersecting Rays which pass over the Ey. And though Air be much more Dens, yet perhaps not much more Opacous then *Æther*, but is as a *Medium*, neither Lucid, nor very Opacous; and I suppose the Opacity that is in it, is more from the Waters above, or Vapors, then from itself, which is an *Expansum* as well as *Æther*: and it is Opacity that Refracts, and Reflects, more then Density, as Ink doth more then other Water, or Glass, though as Dens and Heavy. Thus I conceiv the reason, why the Sun, or full Moon, rising, or setting, seem so much greater, to be from the Vapors in the Airy Atmosphere (as a small Vessel at Sea, in Misty Weather, will seem as bigg as a greater Ship, in Sude Weather, at the same distance) and the Prospect of them Horizontaly through the Vapors may be as far as a Line of Vision from them to the Ey may be tangent on the Globe of the Earth: and this also makes them seem more Red, by Local Union of their Rays of Light with the more Opacous and Dens Vapors: as if you hold Leaf Gold against the Sun, and so look through it, you shall see it Green, by the Union of its Yellow with its own Opacity and Density: but the Sun at Mid-day, and Moon at Midnight, are seen less, and more bright; becauf the Prospect of them then is through a less space of the Vaporous Atmosphere, which is not so great, as the Sensible Horizon of the Earth; and as the Vapors ascend higher, they are less Opacous and Dens; as appears by an open Weather-glass, at the bottom, or top, of a Steeple: and a Man, standing on the top of a Steeple, seems less, then at the same distance on the ground; which is partly from the same, and partly from another reason; becauf we see him Perpendicularly on the top of



the Steeple, and more Hemispherically on the ground; as if we look from the bottom of a Steeple Perpendicularly to the top thereof, it will seem shorter, and neerer, then if we stand at a like distance from the bottom, and behold it more Hemispherically; which is the Natural maner of Vision, as I shall shew heerafter. Again, as the Sun at Midday may be wholly Obnubilated by a thick Cloud, and not seen at all, so he may be so partly Veiled by a more thin Cloud, that we may see his Disk, but less then when we see him in a clear Sky, with the *Halo* and Lustre of his Rays about him. And thus *Venus*, or *Mercury*, or other Starrs, rising, or setting, may appear less; becaus their less Lights are partly so Veiled, though not wholly Obnubilated, by the very Vaporous Atmosphere: for according to the several Degrees of the Opacity and Density of the *Media*, and more or less Lucidity of the Objects, so they are seen greater, or less, respectively and proportionably. And thus not only External, but also Internal Vapors, as in Drunken men, may Magnify Objects. But there is a very great Refraction in the Organ of the Ey, which is therefore so composed, to temper the vehement Lucidity of the Rays; and also by that Refraction, the Rays Converge, and are Contracted, in and by the Spherical Figure of the Ey, whereby the greatest Objects may be seen in small. And as there is no Visible Interfection and Inversion in the Air (as Babys in the *Cornea*, which are Erect Images, and not Inverted, do plainly shew) so neither in the Ey itself, after the point of Incidence in the *Cornea*, where the Rays are so Reflected; and also pass through it and the *Foramen Uvae*, into the Crystalline Humor, whereby they are Refracted, and Converge, untill after and beyond the Point of Exidence; from and out of which they Intersect, and are Inverted, as I suppose, in the Vitreous Humor: for the Aqueous Humor is as a Convexoconcave Glass in itself, whose Convexity doth caust to Converge, and Concavity to Diverge; and being Contiguous with the Crystalline *Lens*, they are Optically both as it were one Continuous Glass, or the like, with some small difference between them; that is, the Crystalline is somewhat more Opacous and Dens, and so may Refract, and caust to Converge somewhat more, and to Intersect somewhat sooner: and we may best conceiv of them both, as of a Globule, or rather *Cylinder*, of a Glass Vessel, whose upper part is filled with Water,

Water, and lower part is solid Glass, and having the upper Extremity more Convex then the neather : and I conceive, that Rays transmitted through such a short *Cylinder* will not Intersect, and be Inverted, within the Body therof, but beneath, and after the Point of Excidence, in the neather Extremity therof; (and in the *Cylinder* itself are only proportionably Inflected and distended) as if you look through a round Glass Vessell filled with Water (and, if you pleas, also let down a *Lens* into it hanging by a string) and place the Flame of a Candle before it, and then apply your Ey behind it, you shall see the Image of the Flame Erect, and not Inverted; though it is true, that if you look behind the dead Oxes Ey, in the *Foramen* of a dark Room, you shall see the Image of the Object Inverted; becaus you look behind the Vitreous Humor therof, wherin I suppose the Interseccion and Inversion to be; and probably in or about the Center of the Ey, which may be below the *Superficies* of such a Sphere, wherof the *Gibbus* in the *Cornea* is a Portion or Segment; and I conceive, that the Irradiation and Actuation of the *Species* in the Internal Light, by the External, and Conjunction therewith, is before the first Interseccion and Inversion of the Rays therof in the Ey; becaus we thereby see the Image of the Object Erect, and not Inverted; and the Internal Light, being so Irradiated, and having its *Species* already Actuated in itself, by the Conjunction with the External Light, is no farther concerned therin, nor in the Interseccion and Inversion therof afterward in the *Retina*, then in the Babys in the *Cornea*; and that it seeth nothing behind it, or backward, but only forward; which is the very Natural way of Vision; and the Immediate Vision is by its own *Species* so Actuated in the Internal Light, as the Standard; as in all other Sensations, as I have shewed: and as the Aqueous Humor is the Organical and Immediate *Medium*, for the transmission of the External Light, so is the Vitreous Humor of the Internal Light: and as we see nothing in the Air, which is the most Natural and common *Medium*, so neither in these Organical *Media*, ordinarily, and according to Nature; unless they be Violently distorted, or infected. Wherefore we do not see the Image of the Object Inverted, and Reflected from the *Retina*, as I have said: for if we did so, we should also see the *Retina* itself, and Concavity of the Vitreous Humor; as when we see an Image in a *Speculum*, we also

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see the *Speculum*; or on the white Paper in a dark Room, we also see the Paper, and that part of the Room. Having thus farr confydered the Natural way of Vision, I shall now proceed to confyder Refraction, and Reflection, also in order to Vision: which to explicate Visibly and Ocularly, let Experiment, therof be made by Lights of Candles set one neer to another; and first place a Convex *Lens* against the midst of the Candles, at such a distance as we usually read; and apply your Ey to the *Lens*, as nigh as we do Spectacles to the Eys; and you shall see all the Candles standing asunder, as wide as a Line of the Page of a Book, and somewhat greater, but not altogether so clear and bright as with the open Ey, as we do thus see by reading with Spectacles. Of which Invention this is the use and benefit, that though they make the Letters to appear somewhat more dim, yet in reading small prints, it is recompensed with the advantage of making them to appear conveniently great; whereas they are not so usefull in beholding greater Objects, or at a farther distance: and probably *Presbyta*, or old men, who need Spectacles, have their Eys, or Crystalline *Lentes*, too much deprest, or otherwise so figured, whereby the Interfection, and *Focus* of the Rays, is to farr below in the Vitreous Humor; for the best Vision is neither too neer to the *Focus*, or Concourse, where the Confusion is; nor too farr from it, where the *Species* are less, as I shall shew heerafter. Then if you draw back your Ey from the *Lens*, being held at a convenient distance between the Candles and your Ey, you shall see only one Candle, and the Flame therof greater and greater, and more and more dim, untill you come to the *Focus*; becaus the Rays, being Refracted through the Convex *Lens*, do Converge to the *Focus*, and the Rays of the Collateral Candles first Intersect, and pass over the Ey and Crystalline Humor; and so, not meeting with the Internal Light, are not seen; but the Rays of that Candle, which is seen, being more Perpendicular, pass into the Ey and Crystalline Humor, whereby it is seen; and they alone so passing into it, and being distended by the Refraction, are Diluted and weakned, and become more dim; and also by their Distention, their Objective Base is enlarged, and the Sight of them is under a larger or greater Angle of Vision, whereby they seem greater, as I shall shew heerafter. And at, and about the *Focus*, where the Visible Interfection is in a very odd maner, as I shall

shall also shew hereafter, there is a Confusion of the Rays, and no distinct Image of the Flame, but only a glaring Light. And as you draw your Ey farther back from it, you shall begin to see the Image Inverted, and proportionably as great behind the *Foens*, as before it, and so less and less, and more and more distinct, untill it begin to be Rotundated into the Spherical Light of the Rays, and so disappear and vanish away into them. Again, if laying aside the Convex *Lens*, you place a Concave *Lens* instead thereof, as you did first before, and so look through it, you shall see all the Candles, but much less, and more clear and bright; because the Rays, passing through it, do Diverge; and therefore *Myopes* use such Concave Spectacles because their Eys, or Crystalline *Lentes*, are too Spherical, or otherwise so figured, as that the Intersection in the Ey is too high in the Vitreous Humor, whereby the Internal Light meeting with the External, in Confusion of the Rays, or too near unto it, the Concave Spectacles do prolong the Intersection, and make it to be lower, whereby they see more distinctly. And the more you draw back your Ey from the Concave *Lens*, you shall see all the Candles still less and less, from the contrary Reason of Divergence; and very clearly, because so many Rays of them all come together into the Ey, and so Illustrate and fortify one another. But there is no Intersection or Inversion seen by looking through any Concave *Lentes*; because there is no such Convergence, as by Convex *Lentes*. Thus you may also try by a Convex *Lens* before a Concave, or Concave before a Convex, or with a Convexoconcave, Planoconvex, or Planoconcave *Lens*, or with Globules, or Prisms, or the like, as you please; whereby you shall better satisfy your self, then can be expressed in any Diagramms. And particularly, you may try with the Perspective Tube, or Telescope, which was the happy Invention of all the advantages of seeing at a great distance, and whereby all the disadvantages are mutually remedied; that is, the Convergence of the Rays doth Magnify, and enlarge the Objective Base, according to the proportion of those few Rays, which arrive to, and meet with the Internal Light; and the Divergence thereof again, before the Intersection, doth also widen the Angle of Vision, and render them more Parallel, and Direct; and as the Perpendicular Ray itself, or *Axis* of Vision, so all Collateral Rays, as they are more Perpendicu-



lar, and less Oblique, are more Visible, strong, and clear. Again, let the Planoconvex, or Planoconcave *Lentes*, be lined, behind on the Plane side, with black Paper, or the like; and first place the other side of the Planoconvex *Lens* toward one Candle, and you shall see the Principal Image of the Flame, which penetrates the Glass, less; and, as you draw back the *Lens*, still less and less Reflected from the *Fundus*, or black Paper, and Erect; though there may be also (especially if you hold the *Lens* somewhat Obliquely) another Image thereof, Reflected only from the *Superficies*, and dancing about it; which will be Inverted, as I have shewed: and the Erect Image in this, or any Plane *Speculum*, though the Profundity thereof be very little, seems to penetrate it as much forward, as the Object is backward, or behind the Ey; for the Natural way of Vision being, as I said, foreright, we seem to see the Reflected Images of Objects behind, as if they were before, and as farr before as they are behind, or proportionably according to the Position of the Ey between the *Speculum* and the Object: for we Immediately see the Image, and the Object Mediatly by it: and yet as it penetrates the Diaphanous *Speculum*, and is Reflected from the *Fundus*, we see it according to the Longitude of the Ray Reflected from the Object to the *Speculum*, if the Ey be neer to it, becaus we also see the Object Mediatly by it. Also the penetration of the *Speculum* by the Ray is consyderable; for if it be too Profund, it doth not only diminish the Visible Longitude, but drown the Brightnes and Color of the Image; as if you look into a deep Water, you shall see only a dark Shadow of your self; whereas in a more shallow Water, you may see more bright Colors of the Reflected Image; but I suppose the dark Shadow which appears in more deep Water is, becaus the Brightnes is Extinguished thereby, and the Rays which penetrate it, are drowned in it: but if the Object be Lucid, as the Flame of a Candle, or Sun, Moon, or Starr, they may appear otherwise; becaus by their great Lucidity they overcome the Opacity and Density of the deep Water. Also it is to be observed, that the Object at the Bank or *Limbus* of a River or *Speculum* is seen Inverted, according to Longitude; becaus the feet, which are next to it, are seen upper, and the Head, that is farther, is seen neather; and as your Ey draweth neerer to the Object, or that to your Ey,

so it will appear more and more Erect : but it is never seen Inverted, according to Latitude, as in a Concave *Speculum*; whereby the Right side shall be seen Left, and the Left Right. But if you take away the Planoconvex *Lens*, and instead thereof place the Planoconcave *Lens*, so as before, you shall see the Object, if you look very neer, much Magnified, by the Divergence of the Rays thereof; and, as you draw it farther back, less and less. Also as before, in the very *Fundus* of the Concavity to which the Rays pass more Directly, and where they so penetrate the *Speculum*, as well as if it were Convex, or Plane, you may see one Erect Image; whereas, if the Concave *Speculum* be not Diaphanous, but Opaque, and only Polite, as of Steel, or the like, you shall see no such Erect Image therein; but only Inverted, so as you shall see others Reflected only from, and dancing about the *Superficies* of the Concave *Speculum*; because they do not penetrate the *Diaphanum* thereof, but being Reflected first from the *Limbs*, and back again from the sides to the Ey, are thereby Inverted, as I have shewed. And if you behold the Inverted Image in the Concave *Speculum* Obliquely, it may seem to come toward the Ey; because it doth not penetrate, and pass forward, as the Erect Image; but you shall alway see it before, and never behind, though the Object be behind you. Thus as there are Primary and Secondary Rays of Light, as I have formerly shewed, so also *Species* of Colors, or Images; that is, the Primary *Species* are of Fixed Colors, which are seen Objectively, as they are, and where they are, (if there be no other Impediment); and the Secondary *Species* are of desultory Colors, or Images, whereby the Objects are seen as they are not, and where they are not, according to the variation of the Rays, as I have shewed. But as we see no Images in the Natural *Medium*, as Spectres in the Air; so neither in the Natural Organ of the Ey, unless it be violently distorted, as I have shewed, or be infected, as with the Jaundise, or the like, or have Motes and Suffusions in it, wherof the Erect Images do appear foreright without the Ey, because they penetrate the *Apex* of the Concave *Cornea*, like the Erect Image in the *Fundus* of a Concave *Speculum*, as I have shewed. And now I shall proceed farther to shew the Differences between Refraction and Reflection; and how Vision is Immediately by Refraction, and only Mediately



by Reflection of Rays, or Images: for Refraction is more Instrumentally Visive, according to which we see through the Organ and *Medium* foreright, but Reflection is more Objective, according to which we see the Object by the Reflected Image thereof Forwardly, but never Backwardly, as I have said. Refraction, as is commonly observed, if it be through a more Opacous and Dens *Medium*, is *ad Perpendicularum*, according to the Point of Incidence; and through a less Opacous and Dens *Medium*, it is *a Perpendicularo*, that is, its own Perpendicular Line, according to the Point of Excidence; and so the Rays, though they Diverge from their own *Perpendiculara* according to the Points of Excidence, yet Converge to the common *Perpendicularum* according to their Points of Incidence; whereby after they have passed through the more Opacous and Dens *Medium* into the other, which is less Opacous and Dens, they Intersect and are Decussated forward, as Reflected Rays do Intersect and are Decussated backward: for so the several Lines of Incidence Intersect, and are Decussated through their several Lines of Reflection; but then the first Reflected is Intersected by the second Incident Ray, and so in order one after another (as we may conceiv thereof, though in truth it is the Continuous Flux of Light, as I have said, which is Reflected after such a maner; otherwise we should see the Reflected Image only as so many several Points, such as children prick out to make Faces in Paper, and not as one Continuous Picture) whereas in Refraction, whereby the Rays are not terminated and reverberated, as by Reflection, but only Converge, and so pass forward, the two utmost Oblique Rays first Intersect one another, and so the next, and the next, in an odd maner; and somewhat like to Lines of Contingence, or such as are Tangent upon the several Points of a Sphere. And now again, for more sensible Explanation, Let a Convex *Lens* be placed against the Flame of one Candle, as before, (whereby the Interfection may be seen on a white Paper) and let the Paper be so placed as to receiv and Reflect it (which may discover all these Optical Experiments, as well as if they were made in the dark Room, for the reason is the same, and though the Room be not so dark, yet the Flame being so very Lucid doth sufficiently manifest them). Thus if the *Lens* be somewhat neer to the Candle, and the Paper to the *Lens*, you shall see first a glaring Light, and  
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Confusion, by that odd Interfection of the Refracted Rays, Converging, and passing through the *Lens*, and then Reflected on the Paper: and as you draw the Paper farther back from the *Lens*, you shall begin to see a greater Image of the Flame Inverted, and so less and less, untill you see it least; and then it is most bright and vivid, by Conspiration of the Rays: whereas if you look through the *Lens* with your Ey at such distances, you shall first see the Flame Erect, and greater and greater, untill you come to that distance where it was least on the Paper; and there looking through the *Lens*, you shall see the glaring Light and Confusion; whereby it plainly appears, that Sight, which is by such looking through the Ey, forward, and not backward, is not by Intuition of the Reflected Image in the *Retina*, but by the Direct *Species* of the Object Refracted through the Crystalline *Lens*; otherwise we should see the Object least, where we see it greatest: and though the Image be Inverted in the *Retina* after the Interfection, yet the *Species* is Erect in the Crystalline Humor, before it; whereby we see the Object Erect, as I have shewed. And as I have formerly observed, so it may appear by the Image Reflected on the white Paper, that the farther the Object is from the *Lens* before it, the neerer is the Interfection behind it, and the neerer the farther; and the more Convex the *Lens* is, like the Crystalline Humor, the difference is the less; and it is greatest at first, and less afterward; so that there appears no great difference in the distances of the *Focus* of the Sun, and Moon, through the same *Lens*, Reflected on a white Paper, though the distances of the Sun, and Moon, themselves, be vastly different; and though their several *Diameters* also be as different, yet there appears little difference therof in their *Foci*; whence some usefull Observations may be collected, which I leave to Astronomers; and shall only Optically observ, that where the Object, and consequently the Interfection in the Ey, are at the fittest Distance, there is the *Meta* of Sight, and most distinct and clear Vision; which also varys according to the several Figures of several Eys, and neerer or farther to or from that *Meta*, we see less distinctly and clearly, as I shall shew afterward. Again, if you take away the Convex, and instead therof place a Concave *Lens*, as before, between the Candle and the Paper, you shall begin to see an Image of the Flame Inverted, but less then



through the *Convex Lens*, and not *Erect*, as through the *Plano-concave Lens*, becaus the *Refracted Rays Diverge* both ways through this *Ambiconcave Lens*, and penetrate through no such *Planities*, nor are *Reflected* from the *Fundus*, as in the other: and as this *Inverted Image* appears less and less, so where it is least, you may plainly see it environed with a *Halo* about it, which is by the *Divergence* of the *Collateral Rays*: and I conceiv that *Vision* through a *Concave Glass* is according to those *Rays* which so *Diverge* thereby, and not according to the little *Image Reflected* on the *Paper*; but I suppose, that it being *Inverted* and *Intersecting* farr neerer then that through the *Convex Glass*, the *Rays* therof, which are doubly *Reflected* to and from the *Limbus*, as I have shewed, and so penetrate the *Fundus*, which is inmost, and pass unto the *Paper*, where the *second Reflection* is, do in the *Eye* pass over the *CrySTALLINE Lens*; and therefore we do not see thereby, and these are much weaker then the other, in their *Focus*, where they burn farr less through a *Concave*, then through a *Convex Lens*: and so are the *Inverted Images*, which dance about the *Superficies* more feint and weak, then the *Erect*, which penetrate the *Profundity*; becaus such *Inversion* is caused by double *Reflection*, which doth weaken, as I have said: wheras single *Reflection* through the *Lens* doth more strengthen, by *Conspissation* of the *Rays*, and that also doth make the *Inverted Image* in the *Focus* *Reflected* on the *Paper* very vivid, and more bright then such as dance about the *Superficies* of the *Glass*. But it is plain, that we do see through the *Concave Lens* only according to the *Diverging Rays*, becaus we do not see only the *Image* of one *Object*, as through a *Convex Lens*, but very many, and all *Erect*, and never *Inverted*: for *Divergence* doth not caus *Intersection*, nor *Inversion*. But generally after the most bright and least *Image Reflected* on the *Paper*, either through the *Concave* or *Convex Lens*, it begins again to be dispersed and disappear, by drawing back the *Paper* farther beyond the *Focus*, and so to *Rotundate* itself, by returning to fill the *Natural Sphere* of *Light*, though the *Flame* of the *Candle* be *Pyramidal*. Also it is generally true, that all *Refraction*, by passing through that contrary *Opacity* and *Density* of the *Diaphanous Body*, though it doth penetrate, and partly overcome it, yet doth also so farr thereby distend and dilate and weaken the *Refracted*

fracted Rays; and by that Union with the Opacity and Density, the *Diaphanum*, with the Light in it, is rendred partly Objective and Visible, and *quasi* Colorous: but Reflection of Rays, which do not penetrate the *Superficies*, or not very farr, but are terminated thereby, and made to Converge, or Reduplicated, doth Illustrate and fortify them; and therefore no Convex burning glass can be made to burn so strongly, as a Parabolically Concave Steel Polite; wherein, as there is no such disadvantage by Refraction, so there are the advantages both of Reduplication, and also of Concurfion of the Rays to a Point. Now I shall confyder Latitude, and Longitude of Vision; which though they are also Optical, and not only Mathematical, yet they are Optically proportionable one unto another, and both with Magnitude. And I suppose that as the Light is Naturally Spherical, and that part of the Ey, whereby we see forward, Hemispherical; so also that Sight is according to an Hemisphere, or some Segment therof; and that, as a *Lens*, which is the Segment of a larger Circle, though it be therefore greater Mathematically, yet is Optically no more then a proportionable Segment of a less Circle; so the Objective Base of the *Pyramis Radiosa*, whereby we see, being, as I said, an Hemispherical Segment, though it be of a greater Circle, and proportionably greater, or more Late, yet contains no more Objects, then of a less Circle; becauf both are proportionably Circular, whether they be Quadrants, or Semiquadrants, or the like, of either Circle: and as the Optical Segment is greater or more Late, so the same Objects contained within it are seen greater proportionably, then if they be continued within the Segment of a less Circle; but heerin the Optical differs from the Mathematical Segment of a Circle; for the Objects are seen greater through a more Circular *Lens*, if it be held neer to the Ey, as in a common Microscope, and proportionably according to the Distance, and Circumference of the *Lens*, which must be greater and more Late, if it be held farther, as in the Telescope; becauf they are seen fewer, when fewer Rays therof pass into the Ey, and more pass over; and fewer Rays passing into the Ey always make a greater or more Late Optical Segment, and are seen as great, as more Objects together within that Segment, when more Rays pass into the Ey. Also the Angle of Vision, as they term it, is proportionable to the Objective



jective Base ; for indeed it is not, nor can it be an Angle of Contingence, nor any perfect Cone (as an Image can never be a Point) but a Conoid, and somewhat Late, proportionably according to the Base of the *Pyramis Radiosa* : and so we are said to see more Objects, under a wider Mathematical Angle ; but we see the same Object greater or more Late, under a more Late Optical Angle, or Conoid ; according to which we see more Immediately in the Ey itself, which is the Standard of Vision, both of the Color, and also of the Latitude, and Longitude. Also the Longitude is proportionable to the Latitude Opticaly, rather then Mathematicaly ; for though a larger Circle hath always a longer *Diameter*, yet as the Optical Segment and Conoid are greater and more Late, so the *Axis* or *Diameter* is shorter ; like a *Lens*, which as it hath a more Late *Superficies*, hath a less Profundity : and thus always, when we see the same Object greater, we see it neerer, and less, farther. And becaus the Natural way of Vision is Hemispherical, therefore if we see Perpendicularly, as I said, that is, according to half the Hemisphere ; as if we lay our Ey on a long Plane Table ; or standing on the Shore, behold the Sea ; or looking on the side of a Brickwall, behold the white Lines therof ; our Vision is disturbed thereby : becaus the other Rays, which do not come to the Ey Hemispherically, but rise toward and press upon the Perpendicular *Axis* of Vision, do oppress and disturb it ; and so the Object seems to rise higher, as the Sea doth to the Sight one way ; and the Rays Converging together toward the *Axis* the other way, seem at length to meet, and terminate the Sight, as the white Lines of the Brickwall. Again in Natural Vision itself, there is an Optical proportion to be consydered, according to the several Figures of several Eys, as I have said ; and so the *Meta* of the most distinct Vision is such, as that some read best farther, and some neerer, as *Myopes*, who hold a Book as neer to their Ey as they may ; becaus the Object being neerer, the Interfection in the Ey is somewhat farther and lower, as I have said before : and they are thus helped by Concave Glasses, as I suppose, rather then by the litle Image which doth penetrate the *Fundus* therof ; though I conceiv that *Presbyta* are helped by the like Image penetrating the Convex Glasses, which they use : but as the Convergence by the Convex Glasses

Glasses doth help them, whereby certainly the Intersection is neerer and higher in their Eyes; so the Divergence by the Concave Glasses doth help the other, whereby the Intersection in their Eyes should be farther and lower; as certainly their common Vision is very much neerer: and as in Convex Glasses, the utmost Rays, which Converge most, and so first Intersect, do therefore pass over the Eye, and only the Rays of the Image pass into it; so also in Concave Glasses, the inmost Rays of the Image, which only Converge, and Intersect so soon, do therefore pass over it: but I refer this to the consideration of *Myopes* themselves, who can better declare the Experiment thereof unto us, than we unto ourselves, who have not their Eyes. Yet I may very well suppose that according to the *Meta* of Vision, which is different in several men, according to the different Figures of their Eyes, so the Latitude and Longitude of Objects seen at the *Meta* is proportionable Optically, but not Mathematically: for probably he that sees at the nearest *Meta*, seeth as many Objects within the Latitude thereof, and them Visibly as far in Longitude, as he that seeth at the farthest, and so proportionably: and so as we all look beyond this *Meta* of the most distinct Vision, we see less distinctly; because the Intersection in the Eye is somewhat varied thereby; though not considerably at any greater distance, as I have said: but I conceive also, that because the Rays which come into the Eye being weaker as they are more distant do less affect the Sight by its own Internal Light in the Standard, therefore we see the Objects less clearly and distinctly; and if they be very Remote, and not very Lucid, we see them very confusedly; and at last not at all; that is, as far as the Visible Lucidity of their Rays doth pass, and no farther: Thus as there is that, which I call the *Meta* of the most distinct Vision, so also a *Limes*, or Boundary of the utmost Vision; which if the Objects be only Coloured, as the Earth, and Earthy Bodies, is not many miles distant from the Eye, and as I suppose proportionable to the *Meta*: but if the Objects be more, or less Lucid, as the Sun, Moon, and Stars, they may be seen proportionably farther: and yet as the Intersection, so the Latitude, and Longitude, is not considerable at any greater distance: for so if we look on the surface of the Sea, we see the *Aether*, and *Aethereal* Bodies therein, not much



greater, nor farther proportionably; but only see the Æther beyond the Sea, as we see Ships at Sea at a great distance, one beyond another, but very neer one to another, though they be farr distant one from another. Also as the Vigor of the Rays is Finite, and therefore less as they pass farther, so is the Strength of Vision itself; and therefore if we look through an open Tube with one Ey, we see the same Object, being but one, more clearly and distinctly, then if we see many Objects with both our open Eys; though we see the one Object neither greater, nor neerer, so as we do through the Telescope. And so though Art may help Nature in one respect, yet it hinders it in another; and therefore also when we see Objects greater, and neerer, through the Telescope, we see them more dim then when we see as great, and as neer, with our open Eys: for Nature is Universally best in herself, and hath best consulted all those benefits together which she intendeth; as I have observed of the three Quantities; that what is gained by one is lost in another; and so Madmen are stronger then others, by a sudden and greater Expens of Spirits, but weaker afterward. And such Artificial advantages of Sight are only to be made use of upon particular occasions, and not constantly; for they who use to read with Spectacles cannot well read without them; nor is it good to dilate the Sight in reading by more Light then is needfull, or to strain it in reading by less, or in too small Prints, and the like: and of all others this most Noble Sens doth soonest decay, and while we enjoy it, is most liable to Deception, as we term it (though it be rather a Natural Infirmary) because Color, which is the Object of Sight, is not Immediately Visible in itself, but by Light, wherof there may be so many several Refractions, and Reflections: and Sensation is Immediately by that which is Immediately produced in the Standard therof, as I have shewed: and so in feeling itself, which is least subject to Deception, yet he that is *Nive perustus* doth not feel the Cold of the Snow, because by the *Antiperistasis*, the Flesh of his Body, which is the Standard, is made Hot: and so the Ey seeing according to the Rays which enter into it, and not the Object itself without it, though it see that which is the Immediate Object to itself truly, yet it seeth the Object itself falsly; and so if either the Optical *Axes*, or Planes, be varied, we see accordingly;

ly; as if we look upon the same Object through several *Dioptra*, or distort one of our Eys, whereby there are double Images therof in the Brain, we see it double, though it be single in itself: so if we turn our Bodys round, the Object seems to turn round; or the Object may seem to be round when only the several *Axes* make a Circle, as in the Firewheel: and so also the round Earth seemeth Plane to us, becaus our Ey cannot comprehend the vast Globosity therof while we stand upon it: whereas all these Infirmities may be easily Rectified not only by Faith, and Reason, but by right Sensations: and right Sens is true as well as right Reason, or Faith; and what is true to one of them is true to them all: nor is there any Falshood in them, or Fallacy in Nature, but only Infirmary, or such a Finite Perfection as it is in itself, which we may otherwise Rectify or Correct, our selves, by the right exercise of all those Facultys, wherof God and Nature hath made us partakers, to instruct us, and not to deceiv us. Now as these five Senses have their proper Objects, and several Sensibles, as I have shewed; so there are many Common Sensibles, which by them, and together with them, may be sensed; and they are such Common Sensibles, not only becaus they are so sensible by and with others, but also becaus many of them may be sensed by several Senses: as all Quantity, and Affections of the Matter, and the like; and there is indeed nothing in this Spectable or Sensible World which is not sensible one way or other: for so all other things, which cannot enjoy themselves, were made to be enjoyed by Sensitives, who thus enjoy themselves, and all other Sensible things; whereby also Intellective Man understandeth Intelligible things in this Conjunct State with his Sensitive Body, as I shall shew heerafter.

IV. Having thus farr passed through the Insensible and almost Inextricable Labyrinth of the Sensorys, I now arrive at the Brain; where, as I said, the Sensation is performed; and which may evidently appear by what I have said, for so this is the reason why Sight by the two Eys, or Hearing by the two Ears, is not double, though the Organs be double, becaus the Sensible *Species* meet in the Brain, where the Sensation is performed: where also, if they do not so meet, the Sensation will be double, as in distorting one of the Eys, as I said; and so if we putt one hand into cold Water, and the other into hott, and the like: and it is



well known, that if a Nerv be bound in any part of the Body, there is no Sensation by it below, but only above, that is, between the Ligature and the Brain: so also the *Gutta serena*, which is in the Optike Nervs, causeth Blindnes, though the Ey, which is the Organ of Sight, be sound and perfect: and in Seing we seem not to see any thing Intermediate between the Object and the Brain, but as it were by a continued Visive Line, or *Radius Opticus*, reaching from one to the other, both through the *Medium*, and Organ. And most certainly all the Nervs are rooted in the Brain, and *Medulla*; and from thence, all the Nerval *Succus*, both in the *Spina*, and in all the Nervs, doth flow forth. Wherefore indeed it was an inexcusable Error in them who would derive the Nervs from the Heart; though that, as I have shewed, by its Motion be the first Operator and Refiner of the Sanguineous Liquor; which is afterward Concocted in and by the more Moderate Temper of the Brain, and there first made a Nerval *Succus*, and from thence diffused into the Nervs, and *Spinalis Medulla*. And so the Scripture, which, as I said, speaks Comprehensively, doth only mention the Heart, as the Original of all Sensation and Intellection: as it doth only mention Blood generally, which so passeth through the Heart, and is afterward distinguished into Arterial, and Nerval: and though some, (who will, as we say, correct *Magnificat*) may cavill and be offended, or judg this Expression to be Popular, yet they ought to confyder, that such Comprehensive Expressions are not Popular, but exactly true in their Comprehensive sens: and thus Heart in Scripture is never Contradistinguished from Brain, nor to be understood so as to Exclude, but Include it, as Blood doth all kinds of Blood: nor is there therefore any mention particularly of any Nerval *Succus*, or of any Brain, or any such thing in Scripture; becaus according to the Language therof, such general Names, as Blood, and Heart, do Comprehend all the rest: wheras we read of Liver, Kidneys, Gall, and such other Instruments of Vegetative Nutrition, rather then of Sensation, and so of Seed and Milk, which are for Generation and Nutrition of others. Now that the fivefold Sensations of the five severall Senses are performed in the Brain, as well as the Sensation of the very Imagination itself, I shall farther most plainly prove, becaus the Sensitive Facultys do all Subsist in the Imagination; as may sensibly appear by the maner of their Sensation, which is not,

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nor can it be, without Animadversion, as we rightly term it, becaus it is the Adverting or applying of the Imagination to Contemplate the Sensible *Species*, and also the Irradiation thereof by its own Animal and Sensitive Light, which makes the Sensation otherwise; though the Object, Organ, Sensorys, and all the *Apparatus* thereof, be ready, and never so well instructed: Seeing we See not, and Hearing we hear not; or we see and hear not, or hear and see not; or see or hear this, or that, Visible, or Audible Object, and not another; or one more then another, accordingly as we Intend it, or apply our Imagination to it, as I have shewed: and I have heard of one, who being to shoot at a Mark for a Wager, professed that he thought he neither saw Heaven, nor Earth, nor any thing besides the Mark; which most vehement Intention did very much conduce to his hitting of the Mark, and wining the Wager: and this Contemplation of the Imagination is that, as I conceive, which we commonly call Common Sense; whereby the Imagination, which is one and the same Faculty in itself, doth thus Contemplate all the several Sensibles; as also one and the same Appetite doth Affect or Disaffect them; and one and the same Understanding understand them, and Will will, or nill them. For it is not the variety of Objects, but the several manner of Sensation, that doth distinguish the Facultys, and make them Really to differ; and thus the Senses according to their fivefold Organs, and Sensorys, whereby their several Sensible Objects, or *Species* thereof, are received severally, and in a several manner, are several; but though their Objects, that is, their Proper and Common Sensibles, may be several, yet as they both are so received in the same manner they do not distinguish the Sense, nor make it several in itself. Also we may here observe the very Spiritual Nature of the Sensitive Soul, and Imaginative Faculty thereof, that though the gross Sensible Objects be not only different, but contrary one unto another, and such as will themselves be Mift one with another, as Heat and Cold will be Contempered into a *Tepor*; or otherwise there will be a great Conflict between them, when they meet together; yet the same Imaginative Faculty doth apprehend them both together (as when one hand is in cold Water, and the other in hott) distinctly, and inconfusedly. Also this sheweth the reason of that Sympathy and Consent that is between some parts more specially, and the whole Body generally, in Feel-



ing, wherof the whole Body is capable, as I said; that is, because the Imaginative Faculty is one and the same, which resideth in the Brain, from whence all the Nerves are dispersed through the Body, and therefore the whole Body is so affected; yet so as a Wound in the Toe doth not Corporeally affect the Brain, or Imagination therein, but Spiritually; and though the feeling in the Toe that is wounded being in the Standard, doth cause a Principal Sensation thereof in that Part, and so in the Brain, and from thence in the rest of the Body; yet that is only a Secondary Sensation, as I may so call it: wherof it is said, if *one Member suffer all the Members suffer with it*; that is only by the Imaginative Faculty of the Sensitive Spirit thereof, which is one and the same; though no other Part be Corporeally affected. And whereas I have often mentioned two such several Kinds of Sensation, that is, one by the outward Organs and Sensory, and by the Corporeal or Elementary Mutation made in the Standard within the Body, and Irradiation of the Elementary Animal Spirits in the Nerves, which is Primary; and the other by *Species*, Actuated only by the Vegetative Spirit in the Elementary Animal Spirits in the Brain itself, as I have formerly shewed, which is Secondary: wherof we call one Sense, and the other Imagination, I shall now shew the Sensible difference thereof in Sleep, when all the Senses are bound up and obstructed; and yet then the Imagination doth thus operate in Dreaming; and the Senses are so bound up and obstructed by the Vaporous Bloud, which ascendeth from the Heart, through the *Carotides*, (whence they are so called the Sleepy Arteries) to the Brain: and it is said, that if they be stopped, Sleep will presently ensue, though I rather conceive that to be an Apoplethical, then Soporose Effect: for it is not the obstructing of them, and thereby hindring the Sanguineous Vapors to ascend, which causeth Sleep, but rather the contrary; that is, an ascent thereof more copiously, which doth obnubilate the *Bas*s of the Brain, and reacheth as far as the Roots of the Nerves; and the Animal Spirits therein, which are most Pure and Spiritual, and the fit Instruments of the Sensitive Spirit, are clouded by such gross and unconcocted Vapors, and thereby rendered unfit; and so the Imagination cannot operate by them; whereupon that kind of Sensation ceaseth, untill those Vapors be again rectified and refined in the Brain, and so pass into the Nerves,

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and then Sleep ceaseth, and that Sensation begineth to operate thereby again. But the Imagination, being seated in the very Brain, itself, and probably in the upper Region therof, and Fore-brain, (which we accordingly feel to grow most hott by the working therof) the Cloud of those ascending Vapors, being there weaker; (as the Vapors are, which ascend higher in the Atmosphere) and the Concoctive Power of the Brain, there being greater, the Imagination may Contemplate the *Species* in the Animal Spirits, which are in the Brain itself, and there Actuated by the Vegetative Spirit, which doth concoct and prepare them, as I have shewed, and which is sufficient for this Secondary Operation by the Imagination, and needeth no such Irradiation by the *Species* of External Objects, as is required in the Primary Sensation. And so this Secondary Operation by the Imagination, in Dreaming, is also much weaker, then it is when we are Waking; or at least farr more Wild, and Irregular: either becaus those ascending Vapors are not yet so purely defecated in the upper Region of the Brain; or otherwise, becaus the Imagination then wants the Archetypes of the Primary Sensation, whereby to rectify its own Contemplations. And it is evident that in Sleep, even the Animal Spirits of the Nervs are not so Confopited, or, as we say, in a dead Sleep, ordinarily, but that any Vehement Sensible doth soon awake them; and the Spirits by degrees are rowled up, and the Vaporous Cloud dispersed; yea while we are asleep, as the Cloud is more or less gross in ascending, or sooner or longer in being purified in the Brain, so is our Sleep greater, or less, or shorter, or longer, and sometimes the Soporouse Cloud is so small, and very Rare, that we are, as we say, between Sleeping and Waking. Now that it is so, may plainly appear by the Causes of Sleep; which are either Expend of Spirits, that induceth a Lassitude, wherupon Sleep Naturally ensueth, becaus Nature requireth a Recruit therof, and the Bloud then ascendeth more copiously to the Brain, which is the part affected, and indigent therof; or Satiety and a full Stomach, whereby the Vapors so ascend of themselves; and Drinking commonly causeth Sleep more then Eating, becaus Drinks are more Vaporous and Spirituous then Meats; or Dejection of the Spirits by Stupidity, and Sorrow, and the like, and so Narcotike Medicines by their Stupifying

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Quality induce Sleep; or Idlenes, and Cessation from Exercise of Body, or Mind, may be another Cause thereof, as it removeth the Impediment of Sleep, or indeed the very Contrary thereof, for so all Exercise is a Waking; and therefore a man cannot well sleep if he do but stand upright; and Sleep, as I may so say, unbendeth the Bow, and relaxeth not only the Perceptive, but also the Motive Spirits; and thus as Exercise and Lassitude, so Waking and Sleeping, do follow, and indeed mutually cause one another, by Expence and Recruit of the Animal Spirits, both Perceptive and Motive; which heereby appear to be very Connatural: for as *much Study is a Weariness to the Flesh*, as the Wise man saith, so weariness of the Flesh is also an Impediment to the Study of the Mind. Now as I have shewed, that all Perceptive Sensation, both Primary and Secondary, is in the Imagination, so if any require that I should also shew what is that Specificke Imaginative Power, whereby the Sensitive Spirit so Operateth (whereof I have thus far traced the Operations, or manner of working, from the Sensible Object to this Sensitive Faculty) as I have shewed, that the Sensitive Spirit itself is an Active Spiritual Substance Created by God in the Beginning, and first produced with this and all other the Innate Qualities thereof, so Actuated by God in this Fifth Day; so I can only affirm that this Imaginative Power is such, because God so Created it; as Matter is Matter, and Spirit Spirit, Heaven Heaven, and Earth Earth, Extension Extension, Heat Heat, and the like, because God so Created them in the beginning; and as no man can go beyond that Beginning, so neither beyond that Creating Causality; but must necessarily at last terminate in the Wisdom and Will of the Creator thereof, when he knoweth that he hath arrived at any Simple Substance, or Accident, which is not Composed, or Mised with others; and this, as I have said, is the *Non ultra*, or utmost Bound, not only of Human, but Angelical Knowledge; and they who will inquire farther into the Cause of every Cause, and so Infinitely, like Children, shall not, nor can they, ever be Satisfied. Wherefore I say, that the Sensitive Spirit of any *Animal* such, as it was Created and produced in this Fifth Day, or afterward, and not being Mised with others (as the Sensitive Spirit of a Mule, which is both Equine and Asinine) is such a Simple Substance Immediately Created by God, though  
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the whole *Compositum* be Compounded of that and a Vegetative Spirit, and Elements, and Matter, as I have shewed: and this is, as I conceiv, the proper Work of a Philosopher, thus to inquire into the Works of Improper Creation, that is the Mixture of Elements, Actuation of Quality, Composition of Matter, Elementary, Vegetative, and Sensitive Natures, and the like; and so like a Speculative Chymist, to Separate those things in their several Natures by his Intellect, which they can never do in fact by all their Instruments, and that it is a very Improper Work for him to inquire farther then the Work of Proper Creation, which he ought wholly to resolv into the first Cause of all Causes, that is, God, who *hath made all things for himself*, and according to the good pleasure of his Will. And so also I say, that as God made the Sensitive Soul to be a Living Perceptive Spirit, accordingly he Imprinted in it certain Simple Innate Notions, whereby it might so Perceiv in a Living manner, by, and with the Instrumentality of the Vegetative and Elementary Animal Spirits and *Species* and a Conjunction between them and the Sensitive Animal Irradiation. Thus Generical Imagination, Feeling, and the like Sensitive Notions, wherewith all Sensitive Spirits are instructed (and not Vegetatives, Elements, or Matter), are the Innate Facultys, whereby Sensitive Spirits do Imagin, feel, and the like; and not the others: and this is, as I said, a double or Reflex Operation, wherof no Inferior Nature doth partake: for Sensitives being Perceptive *Animals* do not only Imagin, Feel, and the like, but also Perceiv, that they do so: wheras others only do what they do, without any such Reflection upon their Operations. Again, there are other less Simple Sensitive Notions Common to all perfect Sensitives, as that the Whole, while it is Whole, is greater then any Part thereof divided from it: and so that Two are more then One, and the like. Also I suppose that they have some Generical Sentiment of Symmetry, Harmony, and the like; becaus these also are Common Sensibles, which they may, and do Perceiv, as well as Proper Sensibles. Besides these there are also Proper Powers; as Ingeny, or Artifice, wherof all Sensitives, as Oysters, and the like do not partake, and so are said to want Imagination: wheras they also have that Common Perception, which I call Imagination, otherwise they should not be Sensitive:



and there are proper Notions, which belong properly to one *Species*, and not to another, as to a Bird to Sing and Nidificate, to a Spider to spin, to a Bee to make Honey, and the like; which, though they are very Ingenious and Artificial in the External performance, yet they are so wrought by them according to the Specific Notions or Sentiments of their kind: as an Infant to Suck; a Lamb fly a Wolf, which he never saw before; and a yong Hound hunts an Hare before he seeth it. Also by these Innate and more Immediate Notions the Imagination is able farther to Acquire, and Collect any other Sensitive Notions, of whatsoever it Perceiveth by any of the External Senses; which it doth likewise add and Ingraft into the others, and retein in itself, and gain Experience, and so may thereby be more Instructed to live the Sensitive Life therof. And the Imaginative Faculty, being thus furnished with Sensitive Notions, can Compound, and Divide them; and so discours of Singulars, or by Particulars, which are Sensible; as an Hound can distinguish one Hare from another, and an hunted from a fresh Hare, and therefore doth accordingly follow one, and not another: and so likewise the Sent of an Hare from the Sent of a Deer, or Fox, or Otter, or the like; and therefore doth accordingly follow it: for Singulars are only as so many Pictures of Individual Hares, and Particulars as the Signe of any Hare, which are both Sensible: and none of these Operations may be denied to Brutes, which are otherwise distinguishible from Intellective Operations, as I shall shew heerafter. But though there be these Common Notions, or Prenotions, which are otherwise called Instincts, in Brutes, whereby they are apt to Perceiv Potentially, yet they cannot Perceiv Actually, without the Instrumentality of the Animal Spirits, and *Species* therin (as well as their own Sensitive Irradiations) as I have shewed: which to prepare for themselves, they have also a Specific Power, whereby they can, as I said, Command and Move the Vegetative Spirit and Power therof, so to Actuate and produce them accordingly as they call for them; and without all these, both Sensitive Principles, and Vegetative, and Inferior Instrumentalities, the Sensation cannot be performed. All which, as I suppose, doth plainly appear by Memory; whereby, when we have Acquired any new Notions, and would Remember them, we thus, as it were, Dictate to the Inferior Facultys, and then they

they produce a new Image or *Species* therof, which we do Contemplate: whereas if it were any former Image or *Species* therof, as hath been supposed, certainly such should pass away with the Substance of the Nerval *Succus*, wherein it doth Subsist; and if that doth not Circulate as swiftly as the Bloud, yet it passeth away more or less continually, and is recruited every Night by sleep: wherefore it is Impossible that the Images or *Species* should remain therein, which we have Acquired so many years since; but the Acquired Notions therof must necessarily remain in the Imaginative Faculty, which continues to be one and the same according to the Individual Oeconomy of the Sensitive Spirit, and wherof the Animal Spirits have the Images Potentially in themselves. I have been informed by a Physician concerning a Knight his Patient, and my well known Friend, that sometime before his Death he could not Remember things done the same Day, and yet could very well Remember things done many years before; which was from the same reason, that the Notions which he had Acquired in his Youth, did remain in his Imaginative Faculty; which was now grown so weak, that he could hardly Acquire any new Notions; and so Youth doth best retain any such Acquired Notions, because they are then recent and fresh: and there are not many others before Acquired, which might oppress the Memory: for though Imagination be a very Spiritual Faculty, yet it is Finite, as well as Sense, and cannot Remember all, nor any more, or better, then according to the Strength therof; and these Acquired Notions are fixed by often Repeating, Meditation, and the like: and as the Sensitive Spirit is very Oeconomical, and therefore much delighted with Symmetry, and Harmony, so the Memory therof is helped by Order; and it will strangely piece its Notions together by any little Similitudes or Allusions; and sometimes when it cannot suddenly Retrive and Dictate them, or if the Animal Spirits be not ready to Aquate and produce the Images therof, we say it is at our Tongues end; as when we are ready to utter a Word and are some way hindered. But as there are Deceptions of Sense, as I have shewed, so much more of the Imagination, as it is more Remote from the Sensible Object, which is Really true in itself; not only as Imagination is a Judicative Faculty, and so may also Err, in Dividing, Compounding, and Discoursing thereby; but



in its most Simple Perceptions; for it is very Mimical, and can Imitate any thing, by its own Types, and Images of things which it did before Contemplate in the more Sensible Prototypes, by the Primary Sensation thereof, as I have shewed: and though these Secondary Species, which are not Irradiated by the real Sensibles, are meer Phantasms, and far more weak and Momentary than the others, yet I know not how, a vehement Imagination can so Intend them, that they shall appear as though they were Real; which certainly is by some such extraordinary Power of the Vegetative Spirit, whereby it causeth External and Corporeal Signatures in the *Fœtus*; and therefore may well cause such Species and Images in the Nerval *Succus*, by such extraordinary Animation of the Animal Spirits: which yet is also first caused by some very strong Acquired Notions in the Imagination, through Love, Pride, Covetousnes, Fear, or some such vehement Lusts and Affections, and a proportionable Sensitive Irradiation thereby; and this is indeed *Leſa Phantasia*: but if those Passions be Sudden and Temporary, then the Imaginations are such also, as in sudden Frights, and the like; which are only *Uno Impetu*: or they may be only particular Distractions, according to such particular Objects about which the Imagination hath been so Intensely exercised; wherof we have a notable Example in him who was

*In vacuo latus ſeſſor plauserq; Theatro,*

*Cetera qui vita ſervaret munia recte:*

and there are many known Instances of such persons, who are thus Habitually distracted as to one Object, which whensoever it is mentioned unto them, that strong and vehement Notion thereof, which they have Acquired, is thereby Excited, and the Phantasm so Sensibly Actuated, that it doth so Predominate, as to over-rule and over-turn all their other Notions, and the ordinary Regularity thereof: and I suppose, that most men have some Tincture of this Madnes, more or less; who though otherwise very Prudent and Sober, yet if mention be made of any thing wherein they affect to Excell, or which they vehemently Love; as their Wit, Valor, Gentility, Estates, Children, and the like; they will run out into such Extravagant discourse thereof, as if they were not the same men therein, as they are in other things: (which we call their Infirmary). Also there is a General and Total Distraction, either Temporary, as in Drunkenes, or Anger, (which

(which is rightly termed *furor brevis*) and the like; or Continual; as when any such Particular Fanny is so Prepotent that it works upon the very Substance of the Brain, or Qualities of the Animal Spirits; or they are so hurt by Sicknes, or any Bodily Distemper, which is properly *Cerebrum laesum*. Now becaus it is confessed that there are such Infirmitys and Deceptions of the Sens and Imagination, therefore Sceptikes say, we are always in a Dream, or Frenzy: but then how do they know it? if they also are like the rest of Mankind, who are all in a Dream, or Mad: for they who are so, think all their Phantasms to be Real Objects; and so they disprove what they affirm: for certainly if all men were so distempered and deluded, we should all conceive those Delusions to be Real, becaus none could disprove them by any more right Cogitations; as if any man should only dream all the days of his Life, he could never refute any of his Dreams; but his whole Life should be only one continued Dream: wherefore since we can distinguish between Dreaming and Waking, certainly we are not always in a Dream; and becaus we can distinguish between some Errors and some Truths certainly we are not always in an Error: though some who cannot, or rather will not, understand any thing of Truth, becaus they will not be obliged to the Obedience and Practise therof, would thus drown all others with themselves in the same Bottomles Pitt of Perdition. There are also others, that think these *Entia Sensationis* to be some such Imaginary Things as are neither Entitys, nor Not-entitys, but they know not what; wheras, as I have said, Imagination is certainly a Real Act; and the Phantasma a Real Species; which the Imagination doth behold, and whereby such Real Effects are produced, though there be no such Real Thing, whereof the Imagination Imagineth it to be the Image or Picture; as a Picture of a Man at large is no less a Picture, though there be Really no such Person in *Rerum natura* as well as the Picture of any Individual Person. But the Imagined Object, as Imaginary Space, and the like, are pure Nonentitys in themselves, though we frame some Real Imaginations therof. Nor is it possible that there should be any *Medium* between Entity and Non-entity, becaus they are Contradictory Terms, and whatsoever any may Imagine therof, yet, if they will *Effari*, they must say, either *Est*, or *Non est*, whereby they shall either affirm or deny it to Be:



and in all Logike, no Proposition can be otherwise formed; either Categorically, or Hypothetically; nor is there any stronger or more undeniable *Dilemma*, then this, Either it is, or it is not Metaphysically, and Simply, which admits no Division, or Distinction; for though there may be many Subalternate Differences of Entity, yet *Ens*, as I said, is *Genus Generalissimum*, without any Specific Difference whatsoever; and as whatsoever is, Is, which is a most Identical and Infallible Proposition, so whatsoever is in any Mode or Respect whatsoever, or with any Subalternate Difference whatsoever, Is: and if it is, it is a Creature of God, which is Convertible, because it is Created from Not-being to Being; and therefore is an Entity in Nature, and not a Non-entity, though the Notion thereof be only an Imaginative Figment: and if it be no Creature it is no Thing in Nature, but only an Imaginary Figment; wherof the Fiction is something, but that which is so feigned is merely Nothing, as I have shewed.

V. Sensation, or Sensitive Life, is, as I have said, always with Perception and Appetite; otherwise it should not be Life: and therefore, as these two do Immediately Subsist in the Sensitive Spirit, so they do also always Cooperate to produce any Vital Act: for thus the Imagination doth Perceive Spontaneously; and the Appetite Affect or Disaffect Perceptively: and these are the most Intrinsic and Immanent Acts of both the Facultys, which they do so act between themselves, but yet their own Operations in themselves, are as different and several as the Facultys; for to Perceive, and to Affect any thing, do very much and very plainly differ: and so their manner of working is very different; for first the Imagination Perceives, and Judges the Object to be Sensitively Good, or Evil; and so presents it to the Appetite, which accordingly Affects or Disaffects it; wherefore since several Cells have been by some found out in the Brain, for the Imaginative, Judicative, and Memorative Powers, (which are only such several Powers of one and the same Imagination, wherein they do all Immediately Subsist) I wonder that never any such Cell hath been appointed by them for the Appetite, which is certainly a distinct Faculty from the Imagination, and Subsisting Immediately in the Sensitive Spirit, as well as it. And as there are such several Powers in the Imagination, so also in the Appetite;

petite; but as first the External Sensible Object by making an Alteration in the Standard of Sens, which is within the Body, doth by it Irradiate the Animal Spirits, whereby the Sensible *Species* are produced, which the Imagination doth afterward also Irradiate, and Perceiv by a Primary Sensation, and accordingly after the Object is removed, Irradiate only by itself, and so Contemplate the Phantasms therof, by a Secondary Sensation; so contrarily the Appetite, which followeth the Imagination, doth first Internally Affect, or Disaffect, in itself, by its own Power which is its Primary Sensation; and then exerts its Appetitive and Motive Power by a Secondary Sensation, either in those Affections which we call the Passions of the Soul, or in the Motion of the Body or any part therof; and though the more Immediate Instruments of the Appetite be also the Motive Animal Spirits in the Nerves, yet it likewise causeth Fluxes and Reflexes of the other Blouds accordingly; which discovers a great Union and Consent between them; and as the Object of this Faculty generally is Sensible Good or Evil, so, according to all the Diversifications therof, the Appetite doth exert itself in those several Passions, which we call Affections, and are, as it were, the Fluxes and Reflexes of the very Sensitive Soul, answerable to those of the Bloud and Spirits, whereby it so expresseth itself: for this Spiritual Faculty is not an idle and ineffectual Affection or Disaffection of the Object, but also armed with a Power to Effect all the Sensitive Operations therof in the Body. And so also the very Motive Power, whereby the Vegetative Spirit is Guided in producing and Actuating the Phantasms for the use and service of the Imagination, is not only from the Imaginative, Perceptively, but also from the Appetitive Faculty Spontaneously. And thus in the same Sensitive *Compositum*, there is not only Local Motion of the Matter to Union, as in the Instance of Introspection of the Finger, and the like; and to Station, as when the Body falls down by its own Weight, and the like: and Elementary Motion by Rarefaction and Condensation, as I have formerly shewed, and also Vegetative Motion, as in Contraction of the Muscles; which certainly cannot be Motions of the Matter, because they are Violent and contrary unto the Rest therof, and as I have shewed, in the *Systole*, the Heart lifts itself upward by this Vegetative Motion, but in the *Diastole* falls downward again by  
its



its own *Pondus* of Matter; which for the same reason can be no Elementary Motion; for in the *Systole* it is contracted, and in the *Diastole* returns again to its own Elementary Laxity by its own Elastical *Potentia*, which was Spiritually contrary to the Contraction. And as the *Basis* of the Heart being united to the Body, the Muscular Contraction thereof doth thereby draw it upward, which otherwise it could not, so all such Muscular Motions are by such Traction to, or Trusion from another Body, as a Fulciment; for so an Heart taken out Moves in the Hand; and a man bowing forward can lift up no more then according to the Weight of his Body, to which the Traction is; but standing Perpendicularly upright, he may lift up any greater Weight according to his Muscular Strength, by Trusion from the ground, as a Fulciment; and so he bears up any Burden on his Shoulders: wheras if there be not such a Fulciment, he can bear nothing, but all will sink together; as if he stand on the Water, or in a descending Scale, or the like: and so a man in a Scale holding at the Beam, cannot lift himself up; becaus it descends toward him, and he cannot also ascend toward it; as he may, if there be such an over-weight in the other Scale as will hinder the descent: nor can he make that Scale, wherin he is, to weigh more then the Weight of his Body, by pulling it down; becaus he hath no hold below him, to which being fastned himself, he might so draw it down. Also besides these Muscular Motions in the Flesh, and the constant Puls caused thereby, (which plainly is Vegetative, or by a Pulsifike Power of the Vegetative Spirit,) there seems to me to be such a sudden and occasional Motion in all these Fluxes and Refluxes of the Bloud, caused by the Passions, as is not only Sensitive, but Vegetative: for I suppose that the Sensitive Appetite in all such Local Motions thereof doth thus Move the Body, not Immediately by itself, but by the Mediation of such Vegetative Motions; and so Guides and Governs them, Directively and Spontaneously, as I have shewed: as when I write, the Motion of my Hand and Pen generally, is from the Elementary Motive Spirits in the Nerve, which the Vegetative Spirit Actuates and produces, and itself Moves by and with them, as it doth by and with the Muscles; or as my Hand writes by and with the Pen, only as a fitt Instrument of the Mover; for certainly my Writing is no kind of Elementary Motion, such

such as is by Rarefaction or Densification, Magnetical or Planetary Virtue, or the like, but a Vegetative Motion, as that is an higher and fitter Instrument of a Sensitive Mover, and also as a Motive Instrument itself; and the Moving of my Hand in writing generally is no Sensitive Motion, nor doth my Pen, Hand, Nerve, Animal Spirits, or Vegetative Spirit, Sense or Perceive what I do: but only my Sensitive Spirit, which therefore in causing this or that Letter or Word to be writ Guides and Governs the Vegetative Mover, as if another should guide my Hand with his; that is, the Sensitive Spirit doth not only Command, as I have said, because the Inferior Spirits have no such Perception or Appetite, whereby to know what is Commanded, and to Obey, but also the Sensitive Moves or causes the Vegetative Spirit, which is Motive in itself (so and in such a manner, whereby this or that Letter or Word shall be writ) to Move the Elementary Spirits, which are its Immediate Instruments, and not otherwise: for as the Vegetative Spirit doth certainly of itself perform all those Motions, which we call Involuntary, that is, which are not Spontaneous, and such as are not Immediately Subservient to the Sensitive Spirit, nor at the Command thereof; so also I suppose, that it doth as well perform all those other Motions which we therefore call Voluntary, or Spontaneous, because they are only Guided and Governed by the Sensitive Spirit. And so that all such Motions in the Sensitive Body, which are not of the Matter, nor only Elementary; that is, by Rarefaction or Condensation, but of an higher Nature; that is, either by Expansion or Compression, or more Regular, as all Involuntary Motions, or more Various and Indifferent, as all Voluntary Motions, are Vegetative; but the Voluntary are also Guided and Governed by a Sensitive Motion: and that all such Motions, whereby we perceive that we do so Guide and Govern them, are Sensitive. And such are all the Moving *Imperia* or Commands of the Sensitive Spirit, whereby it doth Spontaneously Move and Guide the Vegetative Spirit, in producing and Actuating the Animal Spirits, both Perceptive, and Motive, Arresting the Muscles, and the like; and so *Priapismus* and others may be both Involuntary and Voluntary: and such Sensitive Motions though never so swift and sudden, yet are not Involuntary, but Voluntary, if they be with any Perception and Appetite; for in all these Motions the Vegetative



rative Spirit is alway ready to Execute the Spontaneous Commands of the Sensitive Spirit, and is a very quick and Active Mover in itself, as appears by its own Involuntary Motions; but especially in these wherein it is Subservient to the Sensitive Spirit, which is more Active, and requireth such fitt Instruments: and as the Sensitive Spirit Moveth in itself, as quick as Thought or Wish, so where no Deliberation is requisite or to be admitted, or there is an Acquired Use and Custom it presently Commandeth, Perceptively and Spontaneously, and is as presently Obeyed by the Vegetative Spirit, though without any Perception or Spontaneity thereof. And thus I conceive, that these two Sensitive Facultys, Imagination, and Appetite, do Govern the whole Sensitive *Compositum*, residing together in the Brain, as they do Mutually Cooperate, and that they or any of their several Powers are not seated in several Cells thereof, as hath been supposed; but that the several parts of the Brain are for refining, percolating, and preparing the Animal Spirits therein, by the Natural Chymistry of the Vegetative Spirit; and wheresoever these two Facultys have their Centrical Seat, which probably is in the Forebrain, or *Cerebrum*, as it is Eminently so called, they are both together, furnished with all their Sensitive Powers: for the Brain is not divided into several Organs, as an Ey, an Ear, and the like, but is all one Organ of these two Facultys, as the three Humors in the Ey, with their Coats, and appurtenances are one Organ of Sight: yet it is also true that they have their Nervs dispersed from the Brain through the whole Body, both for the Intromission of External *Species* by the Animal Perceptive Spirits to the Imagination, and also for the Exerting of the Motive Spirits and Operating of the Appetite by them in all the Body: and yet as the Facultys themselves are Conjunctly in the Brain, so also these Animal Spirits, which are their Instruments, are conjoined therein, and in the same Nervs: and there may be Operation by the one, and not by the other at the same time; as in Sleep, when the Senses are obstructed by Vapors, which hinder the Intromission of the *Species* of External Objects, yet the Appetite then working in the Brain, as well as the Imagination, may Exert the Motive Spirits, so as to cause us not only to Talk, but also to Walk: and as they are thus Conjunct in themselves, and in their Instruments, so also in their Operations, whereby they do not only Spontaneously Perceive, and Perceptively

ceptively Affect or Disaffect Immanently, in such Actions as are performed between themselves, as I before shewed; but also in all others, as the Appetite doth move the Vegetative Spirit to produce and Aetuate Phantasms, as well as the Imagination doth Direct it what Phantasms it shall so produce and Aetuate; and the Imagination doth also Direct the Vegetative Motions, as well as the Appetite doth Move and Guide them, but they are distinctly called Imaginative, or Appetitive Actions, accordingly as one or other doth Predominate therein. And as they are both thus Conjunct Spiritually, in themselves, so are they also with the Sensitive Body, thus Subordinating the Vegetative Spirit therein Immediately, and by it the Elementary Mixture, and Matter to their Sensitive Spirit, by such Natural Aptitude and Combination, that as the Elementary Animal Spirits are refined and sublimated to the highest Purity wherof they are capable, and their Vegetative Spirit indued with a greater Activity, then appears in any Grass, Herbs, or Trees; whereby they may ascend toward this Sensitive Oeconomy, and be the Instruments of a Sensitive Life; so the Sensitive Spirit also is made, as it were, to Condescend to them by a Conjunct Irradiation of the Imagination, and Eradiation of the Appetite, and cannot Live, nor Act, without them, nor by or with any other Elementary or Vegetative Instrumentality whatsoever; and therefore it hath its own Standards in its own Body; whereby only it doth Immediately perceiv and feel, as it doth the Temperament of its own Flesh, and the Alterations therein; and not any of the External Qualitys, as the Heat of the Fire, or Cold of the Air, without the Body, which only caus the Alterations without, whereby they caus the like within the Body, and so Mediately become Sensible; as the Weather is by a Weatherglass; and not otherwise. And these Internal, and indeed most Proper Sensibles only and none others do Irradiate the Animal Spirits in the Nervs, which are propagated to the Brain, where the Sensation is performed; and the Sensitive Soul also doth only Move its own Body, wherein it is confined, by its own Powers and Organs, and others thereby: as the Hand is therefore called the Instrument of all Instruments. And yet it is in itself a Living and truly Spiritual Substance, and so are all its own proper and Immanent Actions Spiritual, whereby it doth Abstract from more Coporeal Objects Sensitivevely, and also from more Gross



and Inferior Spirits, or Spiritual Qualities; for so though by its Senses it doth Sensibly perceiv Heat, Cold, Pain, Burden, and the like, yet it can Immanently Contemplate, Affect, or Disaffect, the Speculative Phantasms therof, without any more Feeling or Sens, then it doth the Artificial Pictures therof: and indeed the very Sensible *Species*, Irradiated by the Sensible Qualities, are not such as the Sensible Qualities themselves, nor do they so Affect the Brain as they do the Standard; as I have shewed, because the *Species* are only Irradiated thereby: for so Sensible Heat and Cold do not Burn or Chill the Brain, as they do the Flesh, which is the Standard. Having thus farr absolved this *Hypothesis* of Sensation, I shall now referr it to the Judgment of learned Physicians, whom I have ever esteemed a Prudent and Sober Nation; and very deservedly; their Profession being a continual Practice, and their Practice concerning the Life of Man. But I suppose I need not consult them, whether the Sensitive Soul be Centrically seated in the Brain, or in the Diaphragm or Midriff; because it is also termed *Phrenes*, nor whether the *Septum Lucidum*, because it is termed *Lucidum* be the chief Organ therof; or as some say the *Pineal Glandula*, because it only is One and Solitary; a very fit Organ indeed for such an Excrementitious Opinion, which none would ever have affirmed, nor can believ, who hath any purer part of Brain in him: and I very much wonder how such, who require of others a Mathematical exactnes, and Demonstration, can with so much Confidence and Impudence impose upon all others such a *Gratis dictum*, and lay this, as the Foundation of their whole Doctrine of Passions; making all Sensation to be only Local Motion, which is a Common Sensible itself: whereas Sensation, as I have shewed, is a Perceptive and Spontaneous Action; and though a Body be never so Mechanically and Artificially Composed, like *Dadalus* or *Myron's* Cow; or be made never so Automatus, as the Clock at *Strasburg*, *Archytas* his Dove, *Regiomontanus* his Fly, or Eagle, or *Albertus* his Man, with all Imaginable Members, and Local Motions; not only a Philosopher, but every Vulgar Spectator, will say *Deest aliquid intus*: as though a Parret hath Perception and Appetite, which they have not, and can imitate Human Speech, yet we all know that it hath no Human Understanding: and even Vegetative Spirits, which have Plastical, and many other notable Motions, and so Elementary, as the Planets,

nets, and Magnet (which *Thales* therefore termed Animal) have many wonderfull Local Motions, yet they have no Perception or Appetite; which are Living Motions or Actions, wherof all others are only Counterfeits and outward Expressions, like the Motions of the dead *Sultan*, to deceiv the People; whereas any Living Man himself cannot be so deceived, but plainly may Perceiv the Difference in himself: for Local Motion, which, as I have said, is only Local Motion, is no Spiritual Action, which is not only Local, but also Spiritual, and not only Motion, but Action, or an Active Operation, and Superoperation, as the Spirit is a Substantial Activity; especially Sensitive Spirits, (wherof the very lowest are not only termed Creeping or Moving, but also Living Creatures) have such Living Motions or Actions: and such Motions or Remotions from one State to another, as from Death to Life, or from not such an Operation to such an Operation; are certainly Motions, as well as from one Place to another: as they themselves, who affirm them to be only Local Motions, do confess, in affirming them to be Motions, as they are indeed, but more or other then Local, that is, also Active Motions; and many of them such as may be performed without any Local Motion, as though the Appetite in Moving the Body, or any part therof, doth effect and exercise also a Local Motion, yet the very Appetition; and Imagination in itself, and many Operations therof are without any Local Motion; which doth rather disturb Sensation; as in Seing, Hearing, and the like, if either the Body be Moved; or the Object Removed, the Sensation is disturbed: and though Sensible Objects Moving without, or Humors within, may Spiritually Move Sensation by Tempting and Solliciting the Sensitive Spirit, humbly and Inferiorly, as that doth Move them by Commanding and Guiding them, Superiorly; yet they do not therefore Locally Move the Sensitive Spirit, or the Intrinsic and Immanent Operations therof, as that doth Move them Transiently. And I suppose the next Attempt of them, who can thus affirm Sensation to be only Local Motion, will be to reduce Intellection and Volition, and our very Human Spirit, to this common debasement of all Spiritual Natures, (which they generally restrain to Matter and Local Motion) nor indeed is there any thing left, or any such clear difference assigned by them, which may priviledg us from it, but only the favor and Indulgence of these great Masters;



who can say and unsay, make and unmake, what they pleas, and how they pleas; and if all others were like to such, who have no higher Notions then Matter and Motion, it might with some probability be suspected that the Human Spirit is proportionably only Matter and Motion, which would perfectly gratify any who therefore affect to be Epicureans in Opinion, because they are such in Practice. But, as *Scipio* said, It is now more fitt for us to return Praises to God for all these his Various and Wonderfull Works, which can never be confined only to Matter and Motion, then to attend such Triflers any farther.

VI. Therefore let us praise the Father of the Spirits of all Flesh, and advance our Praises by a Song of Degrees, as he doth thus exalt his Creatures by several Degrees in the Scale of Nature. Who is Himself a Spirit, and Spiritual Life, Infinitely Contemplating and Enjoying Himself, and all other things in Himself; and hath given Life to all Living *Animals*, even the lowest Sensitive, which he hath placed in the same Animal Region with Intellective Man; though all Sensitives be Classically different from him, and both Subordinate and Subservient unto him; as he is to God; who hath made them the Images of his Intellective Spirit, as he is of the Divine Spirit. Whereby also they can Contemplate and Enjoy themselves, and all other Sensible Natures; which though Perfect in themselves, and in their own *Classes*, yet without these Sensitive and Intellective Spirits, who only can Contemplate and Enjoy them, had been made in vain, as a Spectable World of many wonderfull and usefull Objects, without any Spectator, or Enjoyer thereof; all whose Goodnes and Perfection, though Good in itself, is farr Inferior to the least Insect; whose Body though more Minute then the smallest Watch, or other Engine is more Curiously and Exactly composed then the greatest Machins; and whose Inimitable Spirit possesseth the whole Sensible World, in the Potential *Species* and Images thereof, within the little Module of itself: whereas all Inferior Natures, whatsoever they are in themselves, are unto themselves, as if they were not; and howsoever they may differ one from another, yet bury all their Specificall Differences in the common Grave of their own Imperception, as if they did still continue in their Original *Chaos*, or the Eternal Abyss of Nonentity. Wherefore Sensitive

sitives were presently Introduced, when they were before prepared for these, as for their next and Immediate Ends of Intention, to perfect all their Perfections; which are not only farr more Excellent in themselves, but thus also derive into themselves all their Inferior Excellencies; Living upon their Inanimate Natures, while themselves thus Live in their own Animate Natures; and are as farr above them, as themselves are Inferior to Man; with whom, though they are not Coordinate, as Sensitives, yet they do Convers, as Living Creatures: and their Sensitive Life, though farr Inferior to his Intellective Life, yet is not only an Image thereof, but also in his own Human *Composition*, the Embryonical Inception, and constant Companion thereof: and his Sensitive Body the Immediate Mansion and Office of his Intellective Spirit, and of all the Operations thereof, in this Conjunct State; and the Imaginative Artifices of Sensitive *Animals* are not only the Umbrages of his Intellective Act, but also in himself Subordinate Operators therunto. Also many of them have Language, that is either the Expression of their Notions by Signes, or of their Passions by Interjections, which is not only a Rudiment of his more Articulate Language but also some Rude Discours, and Essay of his Ratiocinations. And yet all these Vive Images of Man, and his next and Immediate *Conviva*, are not only Subjugated to his Tyranny by his Superior Power and Policy, but also by God and Nature Subordinated to his rightfull Royalty and Dominion; being all born his Slaves and Vassals, who while they Live, serv him in all Offices, either of Labor, or Pleasure, yea Hawk and Hunt, and destroy one another for him; or are otherwise subdued and destroyed by himself. And so he Feedeth and Preserveth his own Individual Life with Innumerable Lives of their successive Individuality; which are in Natures Account the most costly and Princely Diet, though two Sparrows be sold for a Farthing in the Market of Man.



## SECTION XII.

And God said, Let the Earth bring forth every Living Creature after his Kind, Catell, and Creeping things. And it was so. And God made the Beast of the Earth after his Kind, and Catell after their Kind. And God saw that it was Good. And God said, Let us make Man in our own Image, and after our own Likenes. And let them have Dominion over the Fish of the Sea, and over the Fowl of the Air, and over the Catell, and over all the Earth. So God Created Man in his own Image; in the Image of God Created he him; Male and Female Created he them. And God said unto them, Be fruitful, and Multiply, and replenish the Earth; and Subdue it, and have Dominion over the Fish of the Sea, and over the Fowl of the Air, and over every Living thing that Moveth upon the Earth. And God said, Behold, I have given you every Herb bearing Seed, which is upon the  
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the face of all the Earth, and every Tree in which is the fruit of the Tree yielding Seed; to you it shall be for Meat, and to every Beast of the Earth, and to every Fowl of the Air; and to every thing that Creepeth on the Earth, wherein there is Life, I have given every green Herb for Meat. And it was so. And God saw every thing, that he had made, and behold it was very Good. And the Evening and the Morning were the Sixth Day.

#### EXPLICATION.

God caused the Earth also to bring forth Beasts after their several Kinds, which was their Specificall Goodnes and Perfection. And when he had thus prepared and furnished the Elementary World with Vegetatives, Luminaries, and with all Kinds of Sensitives, Fishes, Fowls, and Beasts, he Immediately Created the Intellective Spirit of Man, and so made him to have Dominion over them all, for whom he had before made and prepared them. And he made both Man, and Woman, who might accordingly Procreate; and blessed them with the Blessing of Prolification, for the Increase of Mankind. And he made them and all their Posterity Lords over all the other Inferior Creatures in the Earth; and appointed Herbs and Fruits to be Meat for them;



and for Beasts and Fowls also the green Herb and Grass; whereby they should be Nourished, and Augmented, and so Preserved in their own Individualitys. And then God reviewed all his Works, and the whole Frame and Order therof, pronouncing and declaring it to be very Good, and Conformable to his Divine Wisdom and Will, and to the Law of Creation. And these were the Works of the Sixth Day, and of all the Six days.

### ILLUSTRATION.

1. *Of Beasts.* 2. *Of Man.* 3. *Of the Human Body.* 4. *Of the Human Spirit.* 5. *Of the Image of God in Man.* 6. *Of the Immortality of the Soul of Man.* 7. *The Conclusion of all the Works of Creation.* 8. *Of the Goodnes therof.*

1. **I** Have already discoursed of Fishes and Fowls, and thereupon very largely of Sensation; and therefore shall now only need to discours of Beasts, not as they are also Sensitives, but as they differ from the others, and are Superior unto them; as may appear by their Bodys, that were made of the Earth, and are more Terrene, Firm, and Consistent, and of a more Quadrate, and Cubical Proportion, and more like to the Body of Man: and though some of them be also termed Reptiles, as Fishes generally are, yet I conceiv, that as there are, as I said, Gradient Fishes, which have Feet, and so Fowls, that Creep going upon all fower, are called such from their very slow Motions; so also there are some more Tradigradous Beasts, which are therefore called Reptant, and not that they were Anomalous, or less perfect in their Kinds, then other; for they are also mentiohed to have been made among other perfect Animals, and they were afterward specially preserved, and so are also mentioned among them that entred into the Ark, wherin no *Anomala* were preserved, or such as are by Putrefaction, for  
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so they might be restored again : and indeed if such other Sensitives could be made only of Matter and Motion, it had not been necessary that God should so Extraordinarily have preserved any of them ; for so also he might have restored them, and he doth nothing in vain : wherefore since it is mentioned expressly, not only that God did preserv them generally according to their *Species*, but according to their Sexes, Male, and Female, *to keep Seed alive upon the face of all the Earth*, it is very evident that they were neither Originally made only of Matter and Motion, nor could be so Naturally restored. Also wheras it is said, that God made *the Beast of the Earth* which is conceived to be *Fera Agrestis*, or Wild beast, I suppose it may be so understood in a moderate Sens, that is, less Philanthropous and Tame, though not Ravenous, or Rebellious so as certainly none were Created before the Fall and Curse. And there is still the same difference of more or less Philanthropy remaining in their very Natures ; so that some, though otherwise as Fierce and Couragious as others, are easily Tamed ; as Elephants, Bulls, Boars, Horses, Dogs, and the like : wheras others will very hardly be so Civilised ; as Lions, Tigers, Bears, Wolves, Foxes, and the like : and this Natural difference in themselves is the ground and reason of their more or less Cicuration or Mansuefaction. And that there is such a difference in their very Natures, may appear by this, that they are not only so different toward Man, but also among themselves ; and so it is a common Observation, that the more Mansuete do flock and heard together, and Live in Consort ; wheras Wild beasts Live more Solitary, and are more Strange even to one another. Yet certainly none of them were Carnivorous at first, nor did devour one another ; for both they and man had then another Diet appoiated for them by God, that is, Vegetative ; which also Comprehends the Elements, and Matter, as subordinate unto it ; and as the Elements and Matter are its Subordinate Body, so it is also Nourished by the same, wherof it is Constituted ; and so the Vegetative Spirit may be Augmented by Mistion of more of the Homogeneous Vegetative Spirit latent in the Nutriment : and so the Matter, Elements, and a Vegetative Spirit, make the Body of Sensitives, whereby it is also Nourished, and may be Augmented by Mistion of more



of the Homogeneous Sensitive Spirit latent in the Nutriment; and now when we and some Beasts do feed on the Carcasses of other Sensitives, yet we do not, nor can we, feed on their Sensitive Spirits, or Lives; because they are dead, and there is no Conversion of one Sensitive Nature into another, nor any such Mixture by Augmentation, as of Equine and Asinine Spirits in a Mule, or by Generation; nor yet is the *Anima* thereof, or *Anima Mundi*, as some say, so Subordinate, either to Constitute, or Nourish the Sensitive, as Vegetatives and the rest are, and were so ordained to be both for the Original Formation, and Nutrition of Sensitives; and thus they are not only Subordinate, as a Constituent Body, and Nutriment of Sensitives; but also Subservient, as Instruments of the Sensitive Spirit, as I have shewed, both in all those Motions, which we call Involuntary, and are properly Vegetative, and also in their Instrumental Preparation and Motion of all the Sensorious Organs, according to the *Imperium* and Gubernation of the Sensitive Spirit, in all those Voluntary Motions thereof, which are performed thereby Transiently, and not Immanently in itself alone. Also though God did not so expressly appoint Vegetatives, which are Terrestrial, to be food for Fishes that Live in the Water, yet probably they had the same food growing on the Shores and Banks; and such, as some report, may still be found in the bellies of Sea Monks, and such like Fishes, almost as great as Whales. And though it be not expressly mentioned either heer, or after the Deluge, whether Fishes did not then also prey one upon another, as now they do, yet possibly they might, being made to bring forth abundantly, whereby they might both maintain their own *Species*, and be food for others, or perhaps they might be Nourished by their own Element, Water. However I doubt not, but that some Beasts were Created far more strong then others, as they still are; and that some were Venaturient, as now they are, and had the same Specifike Sagacity, as well as Noses; and so might hunt others with a great Natural Delight, as I suppose they now do with more then any Huntsman that followeth them; which appears, not only by their Indefatigable Industry, but also by their very great Exultation, and Cry; yet I conceive, that then they had no Cruentous or Murdrous Appetite; as now a Lion doth

doth not usually prey when he is full; and Cats first play with a Mous, and then kill it; but then they did only play, and not Kill; when they could not Eat therof; which is the chief End of Killing. And so a yong Leverer, when it first sees a Dog, shuns him, and hath a Natural Sagacity of avoiding, and escaping the Dog, as well as the Dog hath such a Natural Sagacity in hunting the Hare. And heerby also the Ingeny of Sensitives did appear, aswell as in avoiding Poisons, and hurtfull Vegetatives, which as they are in themselves certein Excellency and Eminency in the Vegetative Nature, so are these also in the Sensitive Nature; as of Courage, Fear, and the like Sensitive Affections. But of all Sensitives Beasts are Supreme, that is, in their whole Bestial Kind generally, and so particularly according to their severall Ranks and Degrees, which is the true Rule of Comparison; though the meanest and lowest of of Beasts be not more excellent then the chief Fowl or Fish, and so of Fowls and Fishes. And Beasts do not only excell the rest in their Bodily Constitution, as I have shewed, but much more in their Spiritual Qualitys, which are their very Sensitive Excellency; though they may not have greater or more admirable Instincts then Fowls or Fishes; which are some special Endowments, wherwith Nature doth help out many Inferior *Animals*, yea Insects, as Bees, Spiders, Silkworms, Ants, and the like; and of all others, Man himself, though he hath generally the most excellent Sensitive Spirit Subordinate and Subservient to his Intellective Spirit, yet he hath least and fewest Instincts; and indeed I know none, except Sucking; which is most Common and Necessary; yet as he doth excell them all in the general Sensitive Powers and Virtues, whereby he can more Curiously Contrive and Effect things even by his Sensitive Imagination and Ingeny, and hath such a most fitt Organ therof, as the Hand; so do Beasts heerin generally excell Fowls and Fishes; and accordingly have more fitt Organs then they, and their Brains are more Conformable to the Brain of Man; and he hath not only most Service from them, but also most Conversation with them: and thus they were made in the same Day with him, and next and Immediately before him; and as both he and they have their Sensitive Spirits produced, and their Bodys formed of the Earth, so they both Live



together in the same Floor of this great House of the Elementary World; as God saith to Job of Behemoth, which I made with thee, he eateth Grass as an Ox. Yet we may not therefore, with some Credulous Admirers of Brutes to the Disparagement of our-selves and of all Human Nature, adopt them into the Family of Mankind, and claim kindred of Apes, Baboons, Marmosets, Drills, and I know not what Bestial Fauns and Satyrs, as but one Degree removed from our-selves: for though they may thus approach unto us in our Body and Sensitive Spirit, yet we Classically differ, and vastly excell them, in our Intellectual Spirit; wherof I shall now proceed to discourse.

II. We now ascend into the highest Degree of the Scale of Nature, that is, of Intellectual Spirits, Human, and Angelical; wherof the Human Spirit doth, as I said, Classically differ from Sensitive, and only Specifically from Angels: but as the Human Spirit of Man is united into one *Compositum* with all the Inferior Spirits, and Matter, as they are Subordinate one unto another; so Man is the whole Scale in himself, which Angels are not: comprehending both Intellectual and Sensitive and all other Inferior Natures, as Sensitive *Composita* do Sensitive and Vegetative and the rest, and Vegetative Vegetative and Elementary and Matter, and Elementary Elementary and the Matter, which are the true Approximations and Combinations or Syzygys of Nature (though no Participations Mixtures or Confusions of Classical Differences, as I have shewed) but Man only is the *Epitome* of all, or as the Ancients rightly stiled him a Microcosm, or little World: for as Angels, who are the other *Species* of Intellectuals, are pure Spirits, and no *Composita*; so Sensitive, and all Inferior *Composita*, are not Intellectual; but only Man is all in one; that is, Potentially, or Classically; though not Actually, and Specifically: as the Body of Man hath not Actually the Rarity of Superæther, nor the Density of Subcortical Earth, nor all the Degrees of the Elementary Qualities; though he hath them also Potentially in himself, because he hath in his *Compositum* both Matter, and all the lower Elements, which are Potentially capable thereof, having the Real Potentialities thereof in themselves; and so he is not Specifically Grass, Herb, or Tree, nor Fowl, Fish, or Beast; yet Classically he hath

hath a Vegetative and a Sensitive Spirit in his *Compositum*, and such as is Specifically proper to himself, as well as they have their proper Vegetative, and Sensitive Spirits. Wherefore plainly he is such a Microcosm in himself, as I have described; and the last *Valde bona* is pronounced of him, as he is such a Microcosm, as well as of the great World. And now I shall first discours of Man generally, according to the whole *Compositum*, which every Man hath in himself, and which is indeed that which we call, Man. And as a Traveller, who first by his Mapp sett's forth and travells over the World, wherof he hath yet only a Notional Module or Image in his Mind, when he returns back again, he reviews his Mapp with those Real Apprehensions which he hath Acquired, and comparing both together, finds them to agree, and so being fully satisfied, as he did before Contemplate the World itself only as Notional, he now looks upon the very Mapp therof, as almost Real; thus having gone forth out of my self as it were into this Philosophical World, I seem now to return home again to my self, and in my own Human *Compositum* can behold the Abstract of all that I found abroad: and thus I shall likewise desire any other, who shall have travelled through these Discourses of the World, now to make himself and his whole *Compositum* the Sensible Experiment of the whole System therof, as God hath described it in this Divine History, which is also an Intellectual *Epitome* therof. And so let him consider whether he hath not a Body of Matter, which he may discover by the Extension and Density therof; and therein all the fower Elements, which he may discover by the fower first *Qualitys* therof; and also a Vegetative Spirit, which he may discover by the Involuntary Motions therof, in the Plastical Formation of his Body, Nutrition, and the like; and also a Sensitive Spirit, which he may discover by all his Sensations; and lastly an Intellectual Spirit, whereby he understands all the others, and itself, and consciously knows, that it is not only rude Matter, or any Affection or Variation therof, but that it can Abstract from the Matter, and that there are in it its own Immaterial *Idea*, Notions and Facultys, which must Subsist in an Immaterial Substance, which is his very Intellectual Spirit: and as this is an Intellectual Spirit, so is his Sensitive a Sensitive, and his Vegetative a Vegetative,



Vegetative, and Elementary Elementary Spirits, Classically distinct and different from the Matter, as well as from one another: for thus he knoweth and feeleth in himself, that there is in his *Compositum* a Sensitive Spirit, which sometimes rebelleth against his Intellective Spirit, and a Vegetative Spirit, whose Involuntary Motions the Sensitive Spirit doth not alway Perceiv nor Govern, and therefore they are called Involuntary; and a Mixture of Elementary Spirits, which sometimes, as in a Feaver, or the like, are distempered and disordered, and will not be Governed by the Vegetative Spirit, and Matter which will Move to Union and Station, as I have shewed, maugre all or any Elementary Spirit: wherefore such Different Operations do plainly prove them to be such Different Substantial Principles. And as they thus Classically differ, so plainly they are Subordinate one unto another, according to the Scale of Nature: for so the Intellective Spirit generally Commands and Governs the Sensitive Spirit, as the Rider doth his Horse; and the Sensitive the Vegetative, and the Vegetative the Elementary, and the Elementary the Matter, as I have shewed at large, and any may Experiment in himself; for as this is the Scale of Nature, which God Erected, and the true Oeconomy thereof, which he hath Ordered and settled in the World, so every Man hath, and if he attentively and duly consyder it, may evidently perceiv the same in his own *Compositum*. And, which is yet more admirable, as Man is this Centrical Orb of the whole World, not only Locally as he is in or upon the Earth, which is his Mansion, but Physically, as he is such a *Compendium* thereof; so he is also Politically, according to the Divine Intention of the Creator, that one Nature, which all other Natures do Circumferentially respect, and relate to him one way or other, as so many Lines to the Center: Wherefore as Angels probably were Created first, being the Supreme of all Natures; so Man was made last, as the Summ and Completion of them all, and the Political End thereof, which was first in the Divine Intention, and last in the Execution. And Man was so made in order to the Assumption of his Nature by *Jesus Christ*, the Son of God, who is therefore called the *Begining of the Creation of God*, both *Principium*, and *Principatus*; *Alpha*, and *Omega*, the *First* and the *Last*; and I suppose that Consultation about the Creation of  
Man

Man, *Let us make Man &c.* (wheras it is said of the rest, only by a Word of Command, *Let there be Light*, and the like) did refer specially to *Christ*, who was to Unite and Espous the Human Nature, (which as I said is the *Epitome* of the whole Creation) to the Divine Nature, in one Person. And yet some forgetting that they are Christians, and indeed Men, and seeming to trample on this supposed Pride of Man with a Real and greater Pride and Self-conceit, can be so ungratefull toward God their Creator, and *Jesus Christ* their Redeemer, and so fall to themselves, as to deny or disparage this Originaly Natural, though now depraved, Excellence of their own Nature. Wherefore to retund their Perversity, and to assert the Native Dignity of Mankind, I shall evidently prove it by the Letter of the Text; which declares this to be the very Intention of the Creation of Man, *Let us make Man after our Image, and in our own Likeness. And let them have Dominion over the Fish of the Sea, and over the Fowl of the Air, and over the Catell, and over all the Earth*; and accordingly it is repeated again by God-himself unto Man, after he was made, that he might know and acknowledg it; *Replenish the Earth, and Subdue it, and have Dominion over the Fish of the Sea &c.* and so after the Deluge, God again renewed this Great Charter to Mankind, when also he added a farther Priviledg of feeding on Sensitives. And it is still evidently so according to Natural Reason; for thus, as the Intellective Spirit of Man in his own Human *Compositum* Subordinateth all the Inferior Natures to itself, so also doth Man in his whole *Compositum* Subordinate them all to himself; not as Angels, who by their greater Power can overrule all or any of them, yea Man himself, Externaly and Violently, but by an Intrinsicall Right and Power of Sovereignty and Dominion, whereunto Man was born, and hath it in himself according to the Law of Nature: for so also, though Angels are more excellently Intelligent of all these Inferior Natures then Man himself; yet he is more Sentient therof, becaus he is Sensitive, and they are not: and thus Man as one of them, and being more excellent then them all was made to be their Natural and Lawfull Prince, yet as in his own *Compositum* he hath not Actually and Specifically all the Differences of Inferior Natures, but only Classically, so he doth not possess nor hath



the use of all other things particularly, but generally: and as a *Paterfamilias* or Master of the House, though he hath not the whole *Usus*, but the *Fructus* of all in the Family, and House; yet he may have the very *Usus* of what he pleaseth thereof; for *Quicquid acquiritur servo acquiritur Domino*, so Man doth most Lawfully use the Service; yea the very Lives of Sensitives: and they have no Right or Propriety in any thing that they have, no, not in themselves, against Man, whom God, the Supreme Lord of all, hath thus made Lord over the Works of his hands, and putt all things under his feet; that is, all these Inferior Natures, Beasts of the Field, and Fowls of the Air, and Fish of the Sea, which are next and Immediate unto himself, and in the same Region of Life with himself; and consequently all other things which are below them; but as he is Naturally of the same Intellectual Classis with Angels, whose Native Province is the Superæther, which is also Superelementary, so he hath only a Coordinate Communion with them heer, and shall have Eternally heerafter, in such a way and maner as we do not now understand (nor will I presume to inquire:) and yet even now they are termed *Ministring Spirits sent forth to Minister unto them who shall be heirs of Salvation*. But most Sensibly the whole Elementary Globe, and all things therein, were made thus Subordinate and Subservient to Man, and since our Rebellion against God, and theirs against us, yet, as God declared to *Noah* and his Sons, we still hold the Reins of this Sovereignty and Empire over them in our hands, and so shall untill the last Dissolution: thus it is said, *Every Kind of Beasts, and of Birds, and of Serpents, and things in the Sea, is tamed, and hath been tamed of Mankind*: and none of them could ever yet make Warr with Men, but in all Ages, and all places of the Habitable Earth, are Enslaved, or Ejected, by us. Also as the Tapestrie, and Pictures, and all the *Ornatus* of the House, is for the use of the Master; so hath the Intellectual Spirit of Man the Intellectual Contemplation and Enjoyment of all the Spectable World: and thus we have hitherto discoursed thereof; and though we cannot Comprehend all things, nor all the Secrets and Mysteries of Nature, which we therefore must Admire; yet that very Admiration is another kind of Enjoyment of them: as all Wonderfull Spectacles are very delightfull, and

and we willingly bestow our Pains in travelling to See them, and also very great Cost to Purchase them. But the most Satisfactory and Sensible Evidence of this great Truth is the Universal Curs and Blast that is upon all this Inferior Globe for the Sin of Man; which could not be for any other reason, but only becaus it, and all that is therin, is his: and such Derivative Punishment is also used in the Civil Laws of Men.—*Immeritis franguntur crura Caballis.*

III. I shall now consider Man more distinctly, as he is Composed of Soul and Body; and first his Human Body, and the Successive Generation thereof, according to his Original Creation. I have shewed, how, according to the Scale of Nature, the Matter is the first Body, and the Inferior Spirits, together with the Matter, are the Bodys of the Superior; and so that, and all the Inferior Spirits, Elementary, Vegetative, and Sensitive, are the Body of the Intellective Spirit of Man; which as it is a Sensitive Body may be termed his Beast, (as Beasts are next unto him in the Order of Nature) though indeed his Sensitive Spirit be neither such as the Spirit of Fish, Fowl, or Beast, Specifically, but only Classically Sensitive, as they also are; whereas it is in itself Specifically a more excellent and Proper Spirit, as I have shewed: which was also produced out of the Earth as well as the Spirits of Beasts as they are all of the same Classical Nature: for so, as it is said, *Out of the Ground the Lord formed every Beast*, &c. it is also said, *God formed Man out of the Dust of the Ground*; wherefore his Human Body was not only a *Lutea Imago*, or Statue, as is commonly supposed, and that so God Inspired into it the Breath of Life, both Sensitive, and Intellective; for it was first made a Sensitive Body, having the Sensitive Spirit then latent in it, and ready to be produced; as the Sensitive Spirit in the *Fetus* of any other *Animal* is so produced, when the Vegetative Spirit hath first Formed and Organised the Sensitive Body, as I have shewed, and may now evidently appear in the Creation and Generation of Man; for so God is said to *breath into his Nostrills the Breath of Life*, (or Lives, as it is Hebraically) that is, in the same Instant when God so produced by Improper Creation the Sensitive Spirit, or Life, (which is also called *Breath of Life*) by forming Man of the Dust of the Ground, as well as any Beast



as I said, he also introduced into his Body the Intellectual Spirit, and Life; for so he is said to breath into his Nostrills, that is, into such an Organical part of his Sensitive Body, as any Beast also hath; and not only into a Figure or Similitude therof, which a Statue may have; but plainly they were *Carnea*, and not *Lutea Nares*; and so was all his Body *Carneum Corpus*, and not *Lutea Imago Corporis*: and so *Adam*, after he was thus Immediately Created, that is, by Improper Creation of the Sensitive Body, and Proper Creation, of his Intellectual Spirit, saith of *Eve*, who was also so Immediately Created by God, *this is Bone of my Bone, and Flesh of my Flesh*: and certainly the Body of *Eve* was made of such a Sensitive part of the Body of *Adam*, and so indeed they were both Created by God; as it is said, *Male and Female Created he them*; and neither was the Soul of Man made Superior to that of the Woman, as the *Jewish* Rabbins most fondly affirm; nor yet the Body of Woman Superior to that of the Man, as some fond Amorists are apt to fanfy. And wheras God is said to Build or Ædificate Woman, so also it is said that he Formed Man and Beasts. And this special Ædification of Woman out of the Rib or Side of Man, and not Immediately out of the Earth, was somewhat like Generation by Seed; which is a Decision from the Body of the Parents, whereby the Child is as it were a part therof; and as that makes the Natural Union and *Storge* between them, so likewise this first Creation of Woman in such an Extraordinary maner, otherwise then of any other Feminine *Animal*, (which is not so made, nor any Woman since of the Rib or Side of Man) was not only the Original Institution but Natural Law of Matrimony between Man and Woman in Paradise, more then between any other Sensitive Male and Female: and is so Interpreted in the following words, *Therefore shall a Man leav his Father and his Mother, and shall cleave unto his Wife; and they two shall be one Flesh*. And indeed this is the Foundation of all Civil Society, and Polity of Mankind, wherein he being naturally *Animal Sociabile* excelleth all other Sensitive; for so Husband and Wife were not only before Father and Mother, but, as I may so say, the very Parents of Parentality itself; and without Lawfull, that is, such Human Conjugation, there is no Lawfull, or Human Filiation. Thus Matrimony doth unite not only Man and Woman between themselves, but

but also their Children, as the *Pignora* of their Matrimonial Covenant, and Conjugation, during Life; whereas the Bond of Bestial Copulation and Procreation is not constant, but even Parental is soon forgott and vanissheth away. And this also in Mankind maketh Fornication to be Naturaly and Moraly unlawfull, because *he that is joined to an Harlot is one Body, for two (saith he) shall be one Flesh.* And Matrimony is Mystical, and Typical of *Christ* and his Church; between whom there is a Spiritual, as this is a Carnal Union; and *Christ* hath married it to himself with an everlasting Covenant, as this is Mortal and Temporary: and thus the Apostle citeth the aforesaid Text, and subjoineth, *This is a great Mystery, but I speak concerning Christ and his Church.* Now whereas it is said, that God formed the Body of Man of the Dust, or as it is Literaly, *Dust of the Ground*, and not, as it is said of Beasts, *out of the Ground*, it may import a more Delicacy, or Tenderneſs, of the Human Body, proportionable to the more Excellent Sensitive Spirit, as Dust is a finer and purer part of Earth; but I rather conceiv, that it is so expresseſed to humble Man, the most Excellent of all sensible *Animals*; in that sense wherein it is so afterward applied, *Dust thou art, and unto Dust shalt thou return.* Thus it appears plainly by Authority of Scripture, that Man hath not only an Intellective, but also a Sensitive Spirit, in his *Compositum*; because it is so said that God breathed into his Nostrills the Breath Singularly of Lives Dually, that is, though his Intellective Soul only was Inspired, yet the other was produced. And so also according to Reason; for these two Spirits are Classically Different in the same Human *Compositum*, as well as in a Brute and an Angel; for one is Material and United Mediatly by the Inferior Spirits to the Matter, and the other Immaterial; and so the one can only be and Operate Conjunctly in and with the Matter and Body therof, but the other may be and Operate Separately without them: nor can these be two Spirits Miste together, any more then Matter and Spirit, (whereof, when they are Consubstantiated, the Matter is no less Matter, nor the Spirit Spirit; though they do Consubstantiate one another Mutually and Conjunctly; whereby they are and Operate as one perfect Substance) and much less the Intellective and Sensitive Spirit of Man, which are not Consubstantiated. Neither hath the Intellective Spirit Eminently (as it is commonly termed, though none



can understand what it should signify) the Facultys, Powers, and Qualitys, of the Sensitive Spirit, or the Sensitive of the Vegetative Spirit, or the Vegetative of the Elementary Spirits, any more then a Spirit hath of the Matter, or the Matter of Spirits; nor can any one *Species* have the Proper Qualitys of another, for then they should not be such Proper Qualitys of its own *Species*; And whatsoever Scholastical Notions any others may frame in their Minds, they who search into Nature itself, and consider things as they find them therein, must confess that as they can know nothing of Matter what it is, but by the Extension, Density, and like Affections therof, so neither of Spirits what they are but by their Proper Powers, and Qualitys; as it is truly said, that if a Stone could be made to have truly and Really all the Proper Qualitys of Gold, it must be Gold, and have such an Actual Composition of the Elementary Spirits, wherein those Qualitys of Gold do Subsist: and however Philosophers might distinguish Notionally, all Mankind besides would esteem it; and accept it, as true Gold. Wherefore if the Intellective Spirit of Man had, as they say, all the true and Real Propertys of a Sensitive Spirit, and also of a Vegetative it must be both an Intellective and Sensitive and Vegetative Spirit, which is a Confusion, not only of *Species*, but of *Classes*: and so Man should be a greater Monster then a Mule, or the like Mist *Animals*: for so indeed there may be a Mistion not only of Homogeneous Substantial Spirits, as in all Augmentation, whereby more of the same Specificall Spirit latent in the Nutriment is taken into the Individuality and Oeconomy of the Substantial Spirit of the Principal *Compositum*, and Mist with the very Substance therof; but also Homogeneous Spirits of the same *Classis* may be so Mist, in Primitive Generation, as in a Mule, and the like; and yet because it is Confusion of the *Species*, it may not continue and propagate others: for Nature doth abhor all such Rape and Violence offered unto her, in her Specificall Oeconomys, and will not endure any Successive Multiplication of a new *Species* (as it is therefore Proverbially said, *Cum Mula pepererit*): as well as she doth also abhor the Abolition of any of her Regular *Species*, which are as so many Members of her great Body, and therefore God did so Extraordinarily preserv them in the Deluge. And though it is true that even Sensitive Spirits because they also do

Live

Live have Perception and Appetite, which are Analogous to Intellectual Understanding and Will; and so also all Analogous Affections of Love, Hate, Joy, Grief, Hope, Fear, and the like Living Facultys; as there are many such Analogys in Nature between severall Classicall Spirits and Spiritual Qualitys, yea between them and Matter and the Affections therof, as I have observed; yet they are still Classically Different, as well as there are the like Specifically Different Analogys between the like Intellectual Facultys and Powers in Men and Angels. And by these Analogys and Correspondences in her severall Members, Nature doth Confederate and Combine and Unite all her *Composita*, and her whole Body, and make it one Conjunct Univers in the Whole; and so doth the Human *Compositum* or Nature of Man, (which is, as I said, the *Epitome* of the Univers) thus Confederate and Combine and Unite all the Classically Different Natures in itself. Thus there is both such a Combination and *Compositum* of the Whole, and also a Classicall Difference of the severall Natures in themselves, as so many parts and Members therof, which yet are not Misl or Confounded one with another any more in the litle *Compositum* of Man, then in the great Body of the Univers; wherein certainly they are so Different, otherwise there should be no such Differences in Nature; but either *Materia prima*, or *Anima Mundi*, or both might be Eminently all things; which I have before sufficiently refuted. And it may Sensibly appear that there are such severall Spirits in Man, by their severall Operations, which are not only Naturally Different, but Actively Contrary, as I have shewed, and caus a Conflict in him, as it were between two severall *Animals*; for so it is confessed by all Philosophy, that the Sensitive Spirit doth Rebell against the Intellectual, for the Sensitive Imagination and Appetite, or the Intellectual Understanding and Will, do never so resist and oppose one another; but what the Imagination determineth, and so representeth to the Appetite, as Sensual Good, or Evill, the Appetite accordingly Affecteth, or Disaffecteth it, without any Renitence or Regret; and so it is also between the Understanding and the Will: but the only Dispute in the same Spirit, Sensitive, or Intellectual, is in the Deliberation concerning severall Sensual or Intellectual Objects, or Circumstances therof, and the like, before the Imagination,



or Understanding, can judg and determin that this, or that Object, so Circumstantiated, is Sensually, or Intellectually, Good, or Evill, or Better, or Wors: wheras after the determination is once past, the Appetite doth follow the *Ultimum Distamen* of the Imagination, and the Will of the Understanding without any the least Renitence and Regrer, most Spontaneously, and Voluntarily. Wherefore such Opposite Operations as are commonly between the Sensitive Imagination and Intellective Understanding, and Sensitive Appetite and Intellective Will, plainly declare that the Intellective and Sensitive Spirit in the same Man are Really different, as well as they are so in Brutes and Angels; yea and more evidently, becauf there is no such Conflict in either of them, who are wholly Sensitive, or wholly Intellective; and though the Sensitive Spirit in Man did perfectly submit to his Intellective Spirit in his first Creation, yet they did then also as Really Differ in their own Natures, which are not altered by the Fall, and as they now do as much Naturally Differ when they agree, as when they disagree; though the Actual disagreement doth more Sensibly manifest the Natural Difference: as Actual Heat and Cold, Moisture and Drines declare the Elementary Spirits to be Different Substantial Principles; and though they being all of the same *Classis*, may be united into one *Mistum*, and their Qualitys into one equal and agreing Temperament, yet the Sensitive and Intellective Spirits in Man being Classically Different, neither themselves, nor their Facultys, nor Operations, can be so Mist; and so any Man may feel in himself, that when in such a Conflict, the Will, which is Intellective, doth prevail and Over-rule the Operation, the Sensitive Appetite doth not mingle itself with it, but as it were also by itself reluct and repine, and assoon as it can return to its own Sensual Course: and when the Appetite doth prevail and overrule, the Will doth in like maner mourn, and bewail itself, and assoon as it can return to its own Rational Course: which Sensibly satisfieth me, that they are and remain such Different Spirits, or Substantial Principles, Facultys, and Operations, though they be all in the same Human *Compositum*. And wheras it is said, that the Human *Embryo* first lives the Life of a Vegetative Plant, then of a Sensitive Brute, and lastly, of an Intellective Man, though I have shewed how it indeed begins to live the Sensitive and Intellective Life together in one

one and the same Instant, and so it is said *Man became a Living Soul*, or Person, becaus they are both truly and properly Lives, and the Intellective Denominates the whole Person, Man: and as soon as the Sensitive Life dieth, and the Breath, which is the Instrument therof, ceaseth, and expireth, the Intellective also departs; and as long as the Sensitive Life remains, though in any *Deliquium*, or the like, the Intellective continues; and so the Wise-man saith of men, *as one dieth so dieth the other, yea, they have all one breath*: yet it is very true, that the Vegetative Life, as they call it, is before the Sensitive, as may appear by the *Punctus saliens*, in the Formation of the *Fœtus*; and wheras they say, that this is only the Operation of the Sensitive Soul in a Brute, and of the Intellective in a Man, so Operating Eminently by those Inferior Powers which it hath in itself, before it can exert its own Proper Superior Powers, it seemeth to me very Absurd and Improbable, that it should putt forth any such Eminent Powers which must Subsist in the Proper Powers, before those Proper Powers be Actuated, wherein it must Subsist; as Emanant Light, or Heat, are Potentially, that is Formally, and not only Eminently, in Inherent, but certainly cannot be Actually exerted before the Inherent be Actuated, and doth Operate Actually: though indeed, as I have said, no Proper Quality of one Specifical Spirit can be, Actually, or Potentially, in another, either Immediately, or Mediatly, as the Proper Qualitys of the same Specifical Spirit may be: and so as Emanant Light, or Heat, doth Immediately Subsist in Inherent, and Mediatly in *Æther* or Fire. Wherefore there are three such distinct Spirits, Intellective, Sensitive, and Vegetative, in the Human *Compositum*; and also the fower Elementary Spirits (and they only Mist together in one) nor hath ever any yet affirmed that they also were Eminently in all or any of the others, as that the Intellective, Sensitive, or Vegetative Spirit, is Eminently Hot, Cold, Moist, or Dry, or the like: and yet they might and must affirm this as well as the other, becaus they also are Spirits, and not the Bodily Matter. And thus there are indeed, speaking plainly, Seaven Different Spirits in every Human *Compositum*; not Possessing it or the Body of Matter, (as the Seaven evil Spirits did, which our Savior cast out of *Mary Magdalen*) but Informing, that is, Inspiriting it Naturally, and according to the whole Scale of Nature, wherof they are all the Classical Spirits:

and



and if they were not all in the Human *Compositum*, Man should not be truly the *Epitome* of Nature, or any such Microcosm in himself: but as certainly as he is Composed of Matter and Spirit, which yet remain distinct and different Natures in one and the same *Compositum*, so he hath also all the Inferior several Spirits in him as well as the Matter, and the Matter as well as them; all which together are his Human Body, and not only the Matter, and Elementary Mixture. And now, because I know that this affirmation of so many several Spirits in every one Man will seem very strange to any, who doth not attend, and rightly consider, the true System of Nature, as it is described in this History of Creation, both Proper, and Improper; and because many Christian Philosophers, who strongly maintain and affirm the Proper Creation of the World against all Atheism and Heathenism, yet do not herein also, as they ought, oppose the Improper Creation by God against Human Philosophy and Inventions of Men from which they have derived some preconceived Notions, which are their only Objections against this Doctrine; I shall recapitulate briefly what I have formerly more fully declared, whereby they shall plainly understand that the Objections are only Notions, and that it is not, nor can it be, Really so in Created Nature. Thus, as I have said, God the Creator is the only true Eminence, or Eminent Causality; who comprehending all Possibilities, not Formally, but Eminently, in his own Infinite Omnipotence, could, and did Create, what he pleased from Absolute Nonentity, and so still doth comprehend all Created Entitys, not Formally, but Eminently, in his own Infinite Entity in an Infinite and Incomprehensible manner: but as it is Impossible that any thing should be Generated Actually, whereof there is only a Nonentitative Possibility, and no Entitative Potentiality (as I have distinguished them) because Generation is no Creation; so it is also Impossible that any Natural Agent should Act or Operate by any Power, which it hath not Formally in itself, but only Eminently, as they say: for if it can so Act and Operate, then it hath Formally that Power whereby it doth so Act or Operate; otherwise it should Act or Operate without the Formal and Univocal Power; or it should have it, and not have it, both which are equally Impossible; and so they say, that the Soul of Man doth Sense, and Vegetate, and the like, and yet hath no Sensitive, or Vegetative Powers, and the like,

like, or that it hath them Eminently, and not Formally; that is, it hath them, and it hath them not. But since it is most certain that the Human *Compositum* doth Sens, and Vegetate, and is Hot, Cold, Moist, Dry, Realy and Formaly, as well as any Beast, or Tree, or Stone, or the like, it is most evident that it hath Formaly the Sensitive and Vegetative and Elementary Powers, and Qualitys, as well as they: and then by their own Argument, becaus the Intellective Soul cannot have them Formaly, there must be also in Man a Sensitive, Vegetative, and all the fower Elementary Spirits, wherein they do Formaly Subsist. Again, becaus God is Infinitely one most Simple Essence, therefore he doth also Act and Operate by his Essence; but all Created Substances (even Angels themselves, as I shall shew heerafter) are not Simple as God, but have their Substances and Accidents, and Act and Operate by their Accidental Powers and Qualitys, and so their Nature is composed of Substances and Accidents. And the mutual Conversation of one Substance with another is by their Accidents that are their Emissarys and Agency, and which meeting and joining together, (as Light with Color) by their Conjunction, and mutual Action and Passion, the Operation is produced, (which, as I have said, cannot be in Vacuity, or without some Contact Corporeal, or Spiritual) and as we thus Act and Operate Immediately by Accidents, and upon Accidents, so by them Mediatly we know Substances of other things, and not otherwise. Thus the Intellective Soul doth Act and Operate by Understanding and Will, and by their proper Irradiations and Eradiations, as I shall shew heerafter; and so the Sensitive Soul by its Imagination and Appetite, and their proper Irradiations and Eradiations, as I have shewed before: whereby we know them to be what they are, and therefore since Man doth thus Sens, as well as Understand, and the like, he hath also Substantially in his *Compositum* a Sensitive, as well as an Intellective Soul, and the like; otherwise we must affirm his Intellective Soul to be also a Sensitive Soul, which is to confound Natures Classically Different; and we may as well affirm it to be Vegetative, and Elementary Spirits, and Matter itself, which all make the Human *Compositum*. Again, as Matter, being an Imperfect Substance, must be Composited with Spirits to perfect it; so every Spirit that is Inferior is more Composited with it and others; and the more Superior less, as I have shewed: and this *Compositum* doth



not produce any new Substance which is *Forma Compositi*, nor is any such introduced into it *alioquin*, but it is only the Result of the Composition itself, and the Real Relation therof, not Abstractly and Metaphysically; as Entity, *Genera*, *Species*, and the like, but Concretely and Homophysically, as I may term it; as the Universal, all Animals, all Men, and the like, which are also so many Physical *Individua*: and so is the Human *Compositum* or Man, so many Physical Spirits and Matter Composited together. (And this is only a Natural Corporation, wherein the Intellective Spirit Predominates, and so Denominates the *Compositum*) and the *Forma Compositi*, which is one, is only the Result therof, and according to the Scale and Oeconomy of Nature the *Composita* are thus Naturally United together: for so the Elementary Spirits do immediately Consubstantiate the Matter of the Body of Man, and are all fower Mist together, and have their fower first, and such other Elementary Qualitys, (which are yet Occult and unknown to us) Actuated therein, as well as in any other Elementary *Compositum*, Stone, Wood, or the like, that is, in the Primigenious Mixture and Temper of the Bloud, whereby, and wherof, the Flesh, Bones, and all the parts of his Body are Constituted severally and respectively, by the Operation and Distribution of the Vegetative Spirit, which doth so Plastically Govern and Vary the Elementary Mixture and Qualitys therof, as it doth the Matter and Extension therof so Qualified; and so form and frame the whole *Compages* of the Body Organised and Erected thereby: and the Vegetative Spirit, which doth so Govern and Vary the Elementary Spirits, doth Immediately Consubstantiate them, as they do the Matter; for as they cannot be and Operate without the Matter, nor the Matter become the Body of Elementary Spirits without them; so the Vegetative Spirit cannot be produced, nor Operate without the Matter, and Elementary Spirits, nor they become the Body of a Vegetative Spirit without it; nor can the Sensitive Spirit be produced and Operate without the Vegetative and Elementary Spirits and Matter, nor they become the Body of the Sensitive Spirit without it; and thus also the Intellective Spirit is not before Inspired, nor can now Operate without the Sensitive, Vegetative, and Elementary Spirits, and Matter, nor they become the Body of an Intellective Spirit without it, and wherof not one, nor some, but all together are the Body: but contrarily there may be an Elementary

mentary *Compositum* of the Body of Matter and Elementary Spirits without a Vegetative Spirit, as Stones, Metalls, Minerals, and the like; or a Vegetative *Compositum* without a Sensitive Spirit, as Grass, Herbs, Trees; or a Sensitive *Compositum* without an Intellectual Spirit, as Fishes, Fowls, Beasts; according to the Oeconomy of Nature; as I have formerly shewed, and now more fully approved by the Human *Compositum*, which so Comprehends them all, and in the same Order. Also, as I have supposed, that there is a proper Elementary Mission Subordinate to the Vegetative Spirit, and a Proper Vegetative Spirit to the Sensitive Spirit, and a Proper Sensitive Spirit to the Intellectual Spirit of Man, so this likewise may appear in the Human *Compositum*; for so it is said, *All Flesh is not the same; for there is one Kind of Flesh of Men, another Flesh of Beasts, another of Fishes, and another of Birds*; and yet all Flesh is Elementary; and therefore the Difference must be from the Various Mission of the Human, Bestial, and other Fleshes; and so that there is in Man a Proper Vegetative Spirit, is evinced by the Plastical Virtue thereof so Effigiating his Body, and specially his Hands, which are instead of fore-feet, and all the Natural Arms of other Sensitive *Animals*, Horns, Tusks, Beaks, Claws, Teeth, and Tails, and the like; and also his Erect Posture, whereby he differs from all others: and that there is in him a Proper Sensitive Spirit, is evinced by his Imaginative Apprehension, and Appetitive Delight of and in Beauty, Harmony, and the like, which he can also effect far more Curiously and Artificially than any Brute; nor are those the Works of his Intellect, but of his Imagination properly, though that may be much assisted therein by his Understanding: for many that are otherwise in Understanding almost Idiots, or Lunatikes, have most Ingenious Fancies (which yet are not Instincts as in Brutes) and wherein they far excell the most wise and prudent men, as in Singing, Musike, Dancing, Painting, Carving, and Mechanike: but most evidently that which they call Risibility not only in the Act, but in the Power, is only proper to Mankind, and to no other Sensitive: and though I know that Philosophy hath entailed this also upon Reason, and I will not deny them such a Rational Risibility as they would have, yet certainly they cannot deny a Sensitive Risibility, such as happens by Tickling, as well as Flebility by Beating, wherein Reason hath not any Share; but sometimes we Laugh



or Weep against our Will; and it is only a Sensible Titillation; or Verberation of the Flesh, and a Sensual Delectation, or Pain thereby, which causeth Laughter or Weeping in such cases: though there be a great Analogy between the Sensitive and Intellectual Rissibility, as well as between other Sensitive and Intellectual Affections, which I mentioned before. And now I shall proceed to consider another greater Question, and of greater concernment; Whether the Intellectual Spirit, or Soul, as well as the Body of Man, be *ex Traduce*, as they term it, that is, only Generated by the Parents, as the Decision of the Seed of any other Sensitive *Animals*, or Immediately Created by God? Wherin first I do acknowledg, as before, that the Sensitive, Vegetative, and Elementary Spirits of Man, as well as the Matter of his Body, are so Generated by the Parents, becaus all these are only the Human Body, as I have shewed, according to the Scale of Nature: and thus God did at first produce the Sensitive Spirit of Man by Improper Creation Immediately, as he did all other Sensitive Spirits, latent in the first *Chaos*; wherin also the Proper Sensitive Spirit of Man was so latent, as well as his Inferior Spirits, both Vegetative, and Elementary; all which were Created in the Beginning by a Proper Creation: and so farr I grant a Præ-existence of these Spirits, which are in all Men, as well as of the Spirits of Brutes, and Plants; which as they were afterward produced by an Improper Creation by God, and now are Generated by their Parents Successively, so God and Nature, who do nothing in vain, did then so produce them, and they do still so Generate them in Man, as well as in Plants and Brutes. But I deny that the Intellectual Spirit of Man is latent in the Seed, becaus it was not so latent in the *Chaos*; nor Generated by the Parents, becaus it was not so produced by an Improper Creation, but Immediately Created by a Proper Creation; and Infused by God as it were *alimunde*, and so Inspired, as it is very fitly expressed, in respect of the maner of Infusion therof; for though God cannot be said Properly to Breath, yet as it is a Substantial Activity and Life, so it is termed *Spiritus*, or Breath; and though itself be not Properly a Breath, yet as it was Infused in the same Instant, when God also by Improper Creation produced the Sensitive Spirit, which is the other Life (and so is termed, the *Breath of Life*, which distinguisheth it from

from any Vegetative Spirit, as I have shewed), so God is said to breath into the Nostrills of Man this Breath of Life; and as by Inspiration, the Breath as soon as it is out of the Inspirer, is in the Inspired, so this Intellectual Soul of Man was Infused into him, as soon as it was Created by God; and thus according to the Sentence of the Scholeman, *Creando Infunditur, & Infundendo Creatur*, and was not Præexistent, as the Sensitive, or any other Inferior Spirit, or the Matter, (as some Jewish Rabbins and Rabbinical Christians have Imagined) nor latent in any *Chaos* of Potentiality, but only in *Divina Potentia*, which can Create any Possible Nonentity, and produce it into Entity; whereas Natural Generation is only the production of Potential Entity, or Essence, into Actual Entity, or Existence, as I have shewed. And God is said to breath it into the Nostrills, rather than any other part of the Body, because thereby is the passage for Vapors into the Brain, which is the Central Seat of the Soul, as is hereby also intimated. Wherefore as all Successive Generation is conformable to the Original, and all other Spirits which were then only produced, and not Properly Created, are still Generated by the Parents; so the Intellectual Soul of Man, which was then not produced, nor Improperly, but Properly Created (both in *Adam* and *Eve*, whom he called *Flesh* of his *Flesh*, but not *Soul* of his *Soul*) is still Created by God, and not Generated by the Parents as God himself testifieth, *All Souls are mine; as the Soul of the Father, so also the Soul of the Son is mine*, and *Elisha* acknowledgeth the same of himself, *The Spirit of God hath made me, and the Breath of the Almighty hath given me Life*. And it is so Rational, that unless we also acknowledge it, we must affirm that our very Intellectual and Rational Souls were partly in the Seed of our Father, and partly in the Seed of our Mother, and so by their mingling together, Melt into one; as the lower Elementary Spirits, or the Muline Spirits, and the like; and so that half an Human Soul was lost by the sin of *Onan*. And if the Soul of Man be thus Miscible, then it may be also Unmist again, and is Divisible, and consequently Corruptible, as well as Generable; with many other such Absurdities, which do necessarily follow this Erroneous Opinion. Whereas we may Sensibly perceive, that though, as I have said, the Sensitive Bo-



dy of Man, that is, the Matter, and Elementary, Vegetative, and Sensitive Spirit be so Generated by the Parents, and accordingly are conformable more or less to their Bodily part, as an *Aethiopian*, or *Negro*, begets a *Negro*, a Moor a Moor, and an European an European, according to the several Shapes, and Colors of the Parents Bodys, not only in their Native Climes of *Aethiopia*, *Mauritania*, *Europe*, and the like, but also in any others, so long and untill the habits of the Parents Bodys be afterward altered by degrees, and several Successive Generations: and so Hereditary Diseases happen commonly in Familys: yet there can be no such certain Observation made of any Intellectual or Moral Endowments of the Soul, descending from the Parents to their Children; (notwithstanding the Inclinations from all those Bodily Humors, which may so be derived unto them, and the great advantages of Education, and Conversation, with them, and the like) which *Virgil* had very wisely considered, and so affirmed to *Augustus*, that therefore he could not judg of the Race of Men, as of Horses, and Dogs; and it is a common Observation of Historians, that in Hereditary Kingdoms seldom two Princes of like Disposition succeed one another. But it is most observable in the *Fœtus* of Sodomitical Copulation, that though it may in the Bodily part retein and represent something of either Parent, Human, and Belluine, yet the Predominant Spirit, or Soul, is not so Mist, as in a Mule, which is both Equine, and Asinine; but is either Human, or Belluine, that is Intellectual, or not Intellectual, and having, or not having Rational Discours, and the like: though I rather suppose, that it is never Human, but alway Belluine; and that though God doth generally Create and Infuse an Human Soul into a *Fœtus* begott by Adulterous or Meretricious Copulation, which are only against the Law of Matrimony between two *Individua*, yet he doth not so assist in Sodomy, which is against the Generical Law of Nature, and the Classical Difference therof. And as Sensitive *Animals* of the same *Classis* that are very Heterogeneous will not so copulate, as Beast and Bird, nor Horse and Kine, and the like, as an Horse and Ass will, which are more Homogeneous; so though Man (whose very Sensitive Spirit is more Heterogeneous from all Beasts, then any of them is from another), may  
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through his most Unnatural and Abominable Lust perpetrate such Inland Villany, (which cried to heaven and to the God of Nature for Vengeance against the first Denominators thereof) yet commonly the *Fœtus* is strangely Biform, and Monstrous, and no fitt Receptacle for an Human Spirit; and so it is said, *It is Confusion*. Now though Human Parents do not, nor can they, as I have shewed, so Generate or produce the Intellective Spirit of the Child, as they do the Sensitive Spirit, and others, yet *Homo generat Hominem*, or the Human *Compositum*, which is the Man that is Generated, aswell as any other Sensitive *Animal* doth Generate its like Sensitive *Compositum*; which may evidently appear if we remind what Generation truly and rightly is, that is, no Creation of any Possible Non-entity, nor Transpeciation, or Conversion of one Entity into another, or Production from not such an Entity, Actual, or Potential, and only Possible; which is tantamount to a Creation; but only a Composition *Ædification* or Confabrication of Simple Essences before Created into one *Compositum*, whereby there is Generated a *Forma Compositi*, which was not before Actually, but only Potentially in all the simple Essences, wherof it is Composit; and which also have their own Simple Formalitys, whereby they are such as they are, and were so Created by God, in themselves; otherwise they should not be such as they are, and indeed Absolutely not be, in themselves: and when they are so Composited, there is no new Creation or Conversion of them or any of their own Simple Essences or Formalitys, as they are every one in themselves, into any other; but only the Composition of them all together in such or such a maner (which was Potentially before in them all, otherwise they could not be so Composited) is now made Actually to be such a *Compositum* as it was not before; as any Accident Potentially Subsisting in the Substance is so afterward Actuated (as well as an Houe is so Built as I have shewed) and this is the Generation, that is, *Generatio Compositi*, by such Composition and Confabrication of simple Entitys, for there can be no Composition of Non-entitys. And thus as the Original Generation of *Adam*, or the whole Man, by God, was such a Composition and Confabrication, as he is so said to be *the Son of God*; and of the Woman, by such *Ædification*, as it is termed; so is every Man still

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Generated by his Parents in all Successive Generation, and the only Difference between the Generation of Man, and any other *Animal*, is in the Creation of the Principles or Simple Essences, wherof they are Composited: that is, whereas the Matter, Elementary, Vegetative, and Sensitive Spirits of Brutes, which are their Principles, were all before Created by God; and are afterward Composited by the Parents, (which is their Generation) so only the Matter, Elementary, Vegetative, and Sensitive Spirit of Man were so before Created, and his Intellectual Spirit which is one Principle is Created by God Immediately, in and with the Composition and Generation by the Parents; according to the Law of Nature: which different Creation of the Principles by God, doth not at all concern the Generation by the Parents; that is, the Composition or Confabrication therof, which according to the Law of his Nature is the same in Man as in any other *Animal* (and therefore there is one and the same Blessing of Procreation to Man and Beasts) whereas indeed if Generation were any such Conversion or Transpeciation as is supposed, then Man should not Generate Man, as he doth; And so this Human Generation doth most evidently prove, that all Generation is none other then such a Composition and Confabrication, as I have declared: and thus *Adam* begatt a Son in his own Likenes, and after his own Image, and his Son *Seth* was his Seed, as well as *Eves*, in whose Womb the Generation was afterward consummated, when there was an Infusion of the Intellectual Soul of *Seth* by God; wherof the Instrumental Union, Composition, and Confabrication, was by both Parents, as it is in any other *Animals* by the Male and Female: for so the Generation of Man by Man is according to the Law of his Original Generation, as well as of any Brute by Brute, according to the Law of their Original Generation; and whatsoever Difference there may seem to be between them in their Successive Generations, it is none other then was in their Original Generations; according to which a Man doth Generate a Man, as well as a Brute a Brute. And so according to this Natural Law, and the Instituted Compact or Covenant of Works, which God made with *Adam* for himself and all his Posterity, Original Sin and Corruption is derived unto us all, and every Mans Soul; though as it is the Immediate Work of God the Creator, it is Perfect and In-

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corrupt, (as all his Immediate Works are most Perfect) yet by this very Union and Composition, which is the Generation, it is Corrupted; as it is rightly said, *Non Corrupta Infunditur, sed Infusa Corruptitur*: Wherefore *Jesu Christ* was not so born according to this Law of Natural Generation; and yet he is also called *the Seed of the Woman* (though his Soul was certainly so Immediately Created by God) because the Union thereof with the Sensitive Body was by his Mother: and as *Adam* was Created by God, both by a Proper Creation of his Intellectual Soul, and Improper Creation of his Sensitive Body, so was *Christ's* Soul Properly, and his Body Improperly Created by God; as it is also said, *A Body hast thou prepared me*: and thus as the first *Adam* was the *Epitome* of all Creation both Proper and Improper, so also was *Christ* the *Last Adam*, as the Apostle fitly stileth him, and all that was Extraordinary in this First Man, was to typify him who is therefore also stiled *the Second Man*.

IV. I shall now discours farther of the Intellectual Spirit of Man, which is his Angel, or *Demon*, as it is in this Conjunct State in his Body, and as it Operates therein. And heer again we must review the Scale of Nature, and of the *Composita* thereof; wherein all such as are Imperfect Substances in themselves, and cannot Exert themselves in their Oeconomys, nor Operate without a Conjunction with others, do therefore accordingly affect that Union, Naturally and Necessarily, and disaffect to be disunited; which I call their Composition, and Consubstantiation, whereby they are mutually Conjoined, and Perfected; as Matter, which is such an Imperfect Substance, cannot be pure or alone, but doth so affect an Union with Spirits, whereby it is Inspirited, Activated, and Perfected, or as they term it Informed, and so made, as it were, a Spiritual Matter: and the Elementary Spirits which are lowest and next unto it, because they cannot so Oeconomically Exert themselves, nor Operate without a Body of Matter, as their Vehicle, Domicil, and Officine, do therefore mutually affect an Union with it, whereby they are Embodied, and so are said to be Material Spirits: and though any Body and Spirit make a Complete *Compositum*, yet as Elementary Spirits, which are the lowest, may be more highly Exalted and Purified by Vegetative Spirits, so they also affect an Union with them, whereby they are so much Sub-

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limited, as I have before shewed concerning the Blood, and Animal Spirits; and the Vegetative Spirits, because they cannot so Oeconomically Exert themselves, nor Operate without an Elementary Body, as their Vehicle, Domicil, and Officine, do therefore mutually affect an Union therewith, whereby they are also Embodied in them, Immediately, and, Mediatly in and by them, in the Matter, and so are also termed Material Spirits: and the Proper Vegetative Spirit of Sensitives, as it may be more Advanced toward the Sensitive Nature by the Sensitive Spirits, so also it doth affect an Union therewith, whereby it is so much Spiritualised, as I have shewed in the Involuntary Motions, and other Sensitive Offices and Services therof: and the Sensitive Spirits, because they cannot so Oeconomically Exert themselves, nor Operate without their Proper Vegetative Bodys, as their Vehicles, Domicils, and Officines, do therefore mutually affect an Union therewith, whereby they are also Embodied in their Proper Vegetative Spirits Immediately, and so in and with them Mediatly in the Elementary Spirits and Matter, and so are also termed Material Spirits. Thus they all Consubstantiate one another being Locally and Oeconomically in the matter of their Bodys *per omnia puncta*, and so Coextended thereby, and more or less Divisible therewith, as I have shewed; Also they penetrate one another without any penetration of Extensions, because they have no Extension of themselves, but only are Coextended, as I said, in and by the Matter, that is, they are in their own Vehicle, Domicil, or Officine, which they Inspirit and Inform, as their Body and Seat, from which, or any part therof, they abhor to be removed, or that it should be in any manner discontinued; but though they be thus Locally United, and Naturally Composited and Consubstantiated, yet their Consubstantiated Natures are still Classically Different, and they are still distinct Matter and Spirits, or one Spirit, and another, as before, both in their Essences, Affections, and Operations, and do not participate of one another; for the Extension of Matter is neither Hot nor Cold, nor Heat and Cold Nutritive, nor Nutrition Sensitive, but only they are Subordinate and Subservient one unto another, as I have shewed; whereas Spirits of the same *Classis* may be not only Locally United, but Spiritually so Mist in their Essences, Qualities, and Operations, as to participate one of another, and be confounded one with another, as Heat and Cold are

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in *Tepor*, and the Equine and Asinine Spirits in a Mule, which are no longer a Distinct Heat and Cold, Horse and Ass, nor only a *Compositum*, but a *Mixtum* of both, like the Mixture of more of the same Specificall Spirit in the Seeds of both Parents, wherof one is not Prolifike without the other, and in the Augmentation of Vegetatives, or Sensitives, Indistinctly and Confusedly. Now the Intellective Spirit of Man being a Perfect Substance in itself, and such as may Individually Exert itself, and Operate Separately, and doth not Inhere, as Light in a Lucid Body, but is as Light in the *Diaphanum*, is therefore neither Consubstantiated with the Sensitive, or any other Inferior Spirits, or the Matter any more then an Angel, who Possesseth an Human Body; nor can it be Mixt with the Angelical Nature, or any Angelical Spirit, or with more of any Human Spirit; becaus it is Immediately Created by God, a Perfect Substance in itself, Ingenerable, Incorruptible, Immiscible, and Indivisible, as well as any Angelical Spirit. And yet as there is some mutual Indigence and Opitulation in and among all Created Natures, as so many parts and Members of the Universal Body therof, so even Angels, who are most Immaterial, (not only as other Spirits, wherof none is any Matter, as I have shewed) but have least need therof, either by Consubstantiation, as they, or Inhabitation of a Body, as the Human Spirit, yet becaus they also have no Extension of themselves, whereby they may be in their own *Ubi*, or Place, therefore must be in the Universal Body of the World, and in some part or *Ubi* therof, as Magnetical Virtue is in any *Medium* Indifferently, and when they are in one Place, they are not, nor can they be in another, nor can Instantaneously pass from one to another, nor can annihilate or evacuate the Nature of Extension, or the Density, or Gravity of Matter, nor do any thing contrary to the Law therof, nor Infinitely overcome it, but Finitely, and according to some certein proportions: and therefore Move not so swiftly through more Dens, as through more Rare Matter, nor can so easily lift more Grave as more Light, as I have shewed: and I grant that there is also such Coordination between the highest and lowest Nature, Angels and Matter; becaus they are both Natures, and Created Entitys, contained within this Universal as Parts and Members therof, and within the Universal *Genus* of all Created Entity; but they have otherwise no Commu-



nion with any particular Body of Matter, nor have any such Vehicles, Syderous, Igneous, Aereous, Aqueous, Terreous, as some suppose, whose Souls are so farr Immersed in the gross Matter, as that they cannot conceive Angels, or any thing to be Immaterial, or without a proper Body of Matter, nor God himself, without an *Ubi*; though his Immenity be Infinite, and Infinitely Different from all that is Finite, and therefore Infinitely free from all Extension, Place, Space, or *Ubi*, or any Notion, or Imagination therof, becaus it is Incomprehensible, and such as must be acknowledged and adored, but can never be comprehended. Whereas Man, though he be more concerned in the Matter, and Material Spirits, then Angels, and so may be said himself to be more Material then they, yet as he is little lower then the Angels, and much higher then the other Inferior Natures, (wherof also all, except the Matter, are Spirits) should more Contemplate Spirits, and their Spiritual Nature, and not wholly bury himself in Matter, who hath no such Union with it Immediately, or Medately, but that he may Exist in his own Intellective Spirit, and Operate Separately without it in his Separate State; though as he is the *Epitome* of all Classial Natures, so he doth Subordinate all the others unto himself, as they do one unto another in this Conjunct State; and though his Proper Sensitive Spirit, as well as others, doth also Naturally and Necessarily affect this Union, yet he doth not so mutually affect it, as that he cannot Be, and continue in his own Individuality and the private Oeconomy of his own Spirit, and Operate Separately without it in his Separate State as well as Angels: and yet being also capable of this Conjunction or Composition as well as other Spirits, though in another maner, as I have shewed, he doth Naturally indeed, but not Necessarily, affect it, as they do: and so is the great *Amphibium* between both, apt to live Conjunctly and Separately in both Worlds, and in the lowest Earth, and highest Superæther. And thus the Human Spirit in this Conjunct State is in the Body, not Inherently, as I have shewed, nor yet so in its Element, as a Fish in the Water, which cannot live out of it; or as a Plant that is Rooted in the Earth; but as a Master in a Ship, who can also live out of it; or, as the Scripture more aptly expresseth it, as in a Tabernacle, wherein he shall not abide long; and so the Rabbins call the Body *Vagina Anima*. But whereas the Schoolmen say, that it is *Tota in toto*

& *tota in qualibet parte Corporis*; I cannot understand it of the very Substance of the Soul, nor do I conceive it to be Intelligible: for though I acknowledg it to be not only as a Master in one part of a Ship, as in the Heart, or Head; but like *Heracles in Urceo*; possessing and filling all the Vessel; and also that it hath all its Facultys and Powers every where in the whole Substance of itself, either Actually or Potentially; because it is Indivisible, and hath no Extensive, but only Coextensive parts, and them not so Coextensively United to the Matter, as Inferior Spirits are; yet it doth Operate Actually in one part rather than another, (which the Scripture Comprehensively calleth the Heart, and sometimes more particularly the Head) and so indeed it must, because it now Operates by the Instrumentality of the Sensitive Spirit, which is Centrally seated in the Head and Brain, and not so in the whole Body, (though it Operate Communicatively and Diffusively through the whole Body) but in other parts, where it is also, it doth not so Operate, Actually: and as it cannot so Operate, and not so Operate in the same Place, any more than in the same Time, so because itself is diffused in and through the whole Body, therefore it is not all in any part thereof; otherwise it should not be so diffused; and it cannot be diffused and not diffused in the same Place: and as it is all within the Body, and therefore cannot be without it, in this Conjunct State, so, if it were all in any one Part of the Body, then it could not be in any other; wherefore since it is *tota in toto*, it cannot be *tota in qualibet parte*; for both cannot be true of any Extension, or Coextension whatsoever. Nor doth the Spiritual Intirety and Indivisibility of the Human Soul alter the nature of the Extension of the Body, or Coextension of itself; nor do they, or either of them, destroy the Intirety and Indivisibility thereof, which is not Local, as is supposed, but only Spiritual; as a Ray, or Orb of Emanant Light is Spiritually Intire and Indivisible in the Lustre, or Image therein, but not Locally, (for it may be measured by so many Inches, Feet, and the like, Coextensively, according to the Extension of the Diaphanous Body wherein it Locally is) but Spiritually, so as you cannot clip off an Inch, or an hairs breadth, of the Ray; and wheresoever that is, there is also the Lustre and Image: and so you may measure a Man, both Body, and Soul, according to his Bodily Extension. Yet if a Leg, or Arm,  
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or half the Body, by a *Turkish* Torture, be cut off, the Soul, or any part thereof, is not divided; but as the Light retires into itself, when you divide the Diaphanous Body, so doth the Soul, which is yet Spiritually more Intire and Indivisible then the Light; for that by Reflection is Reduplicated, and fortified more in and by that Reduplication; whereas a Man, who hath lost a Limb, is not more or less Intellective then before, because the Intellective Spirit is perfectly Intire and Indivisible in the Spiritual Substance, and all the Facultys thereof within the Body, and more then any Emanant Quality is out of the Body; and so is one perfectly Intire and Indivisible Individuality and Oeconomy in itself, farr otherwise, and more then any Tree, or Eel, or other Vegetative, or Sensitive, as I have shewed. And I shall now endeavor to shew how the Intellective Spirit doth Operate in this Conjunct State, both in the Understanding, and in the Will: for though it be, as I said, most perfectly Intire and Indivisible in its Substance, and in its Facultys, and Operations therein, yet as a Finite Creature, it hath its Substance, Facultys, and Operations, of several distinct Natures; and is not only Essence, and so doth Operate only by its Essence, as God the Creator, but as other Spirits, or Substantial Activitics, it also hath its Substance, Powers; and Acts; and as the Sensitive Spirit is a Life, as well as the Intellective, so it is the neereest and best Resemblance thereof; having, as I said, Sensitive Imagination, and Appetite, and the rest of the other vital Facultys, respectively Subsisting therein; for so hath the Intellective Spirit an Analogous Understanding, and Will, and the rest of the other Vital Facultys, respectively Subsisting therein. Also as there is Imprinted and Implanted by God the Creator in the Imagination a general Perception, or Notion, so there is such a general Intellection or Notion in the Understanding, which I shall better explain by what I have said before of Sensation: for so as I said, this Notion is not only a Simple Operation, as all Inferior Operations are, but besides the very Operation there is a Perception thereof in any Brute, whereby it is Perceptive, that it doth See, or the like, (as well as it doth Perceptively Affect, as I have said) Conjunctly in and with the Operation itself, though not Reflexively afterward, or by a farther Consideration what Seing is, as in Man. And this Conjunct Operation is, as I said, Living, and Sensitive, and is first  
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by the Power of the Imagination, whereby it so Operateth, that is, Seeth, or the like : wherein, as I have shewed, first the External Light, doth Irradiate the Colorate Object, and by the Reflected Rays thereof convey the *Species* wherewith they are tinged to the Ey, and there the Internal Light doth again Irradiate them, and by the Reflected Rays thereof convey them to the Animal Spirits in the Optike Nerve, and Brain, so prepared by the Vegetative Spirit to be fit Instruments of the Sensitive Soul, and which Aquateth the Potential Images therein, so as they are made fit to be Irradiated and Illustrated by the External *Species*; and the Imagination, when it doth Animadvert them, doth, as I conceive, again itself Irradiate them by a far more Pure, Spiritual, and Sensitive Light, as I may so term it, whereby the Object, which is gross in itself, is thus Purified, Spiritualised, and Sublimated, first in the *Species*, then in the Images thereof, and lastly in these Phantasms, which are, as it were, the *Species* of these Images, and the Immediate Objects of Imagination, as being most Refined and so approaching neereſt to the Spiritual nature thereof, and thereby most prepared and made fit for it : and by that Irradiation of the Imagination Reflected and retiring into itself, the Sensitive Soul doth Sense or perceive them, and withal it doth Sense or perceive, that it doth so perceive ; which is the other Operation that I intend, and indeed the very Vital Act thereof ; and in that, and the Spontaneous Appetition, (which doth not only Eradiate and Emitt a Motive Power, or a very Pure, Spiritual, and Sensitive Heat, as I may so term it, but also doth it Spontaneously, by such another Conjunct Operation ) doth Sensitive Life consist. And though I expresse them as Sensibly as I can, by Light, and Heat, as we usually call such Spiritual Qualities *Lumina*, and *Igniculos Animi* ; yet I do not intend thereby any such Elementary Qualities, but far more Spiritual, Vital, and Sensitive ; and only Symbolical, and Analogous to the other, as there are such Analogys in Nature, and as the *Species* of the Object are so Refined, as I have shewed, to render them as Spiritual and Analogous as they can be made : and though I mention only Seeing, because it is a most Spiritual, and most Conspicuous Sense, and wherein the *Species* are more Refined by the External and Internal Light, which is the Standard thereof, then perhaps the Sensible *Species* of any other Sense, in and by the Standard thereof ; yet I



conceiv that their Sensible *Species* are in like maner Irradiated respectively (though I want other respective Terms to exprefs it) by the Imagination: thus in Hearing there is a Sensible Sound conveyed to the *Aura* in the *Tympanum*, though I know not, that there is any Emanation therof, nor farther Purification thereby, or in the *Aura*, (as is in Seing, which is the most Spiritual Sens) but only that it is a Standard between the Sensible Sound, and the Auditive Animal Spirits in the Nervs and Brain; and that all the Images therof being Potentially in them (as all Parts and Members of the Body are in the Bloud, and all Sensible Sounds, as I said, in the Air) they are Irradiated, as I must so again term it, by them, and so pass through the Auditive Nervs to the Brain, as any Sound from the first Collision, at one end of a String stretched and held by the teeth at the other end, doth pass from one to the other; and so they are again Irradiated by the Imagination, whereby the Sensation is performed: and the Imagination doth both Hear, and perceiv that it Hears, and so of the rest. And thus also, as I conceiv, when the Imagination doth Fausly, as we call it, that is, Contemplate Phantasms Actuated only by the Vegetative Spirit, at the Command, and by the Government therof, without any such Irradiation by the Sensible Object or *Species*, yet itself doth Irradiate them more or less; that is Animadvert, though commonly so feintly and transiently, that they are, as I said, only as Spectres of the *Species*, and pass away, as we say, as quick as Thought; becaus the Imagination, being a very Active Spirit, doth so pass from one to another; and it is not requisite that they should continue longer; but give place to others: and yet sometimes the Imagination is so Vehement, and doth so Intensely Irradiate them, that they are as apparent, as if they were Illustrated by the very Sensible Object, or *Species*; as in the Instance of the Firestick, and the like, after the Object, and *Species* therof are removed, as I have shewed; and sometimes also more permanently and steadily, even as if the Phantasm were a Real Object, as in the Instance of him,

*Qui se credebat miros audire Tragædos:*

and in very great and sudden Fears and Frights, and the like, in others. Now the Understanding and Will of Man, though they be Classically of an higher Nature then Imagination, and Appetite,

tite, yet they are all in the Region of Life, as I have said, and very Analogous in their Living Operations; and Conjunct in the Human *Compositum*, wherein the Intellective Spirit of Man doth Predominate, and as his Sensitive Spirit is Immediately Subordinate, so it is also Subservient unto it; and as the Vegetative Spirit doth Actuate the *Species*, and Phantasms, in the Animal Spirits, which are Elementary, for the Imagination, which doth so Irradiate them Immediately for itself, and thereby Sens and perceiv them; so the Imagination doth also Actually Irradiate its own Phantasms for the use and service of the Understanding, whereby they become the most Spiritual and fitt Objects thereof: and then when the Understanding would Animadvert them, it doth farther Irradiate them by its own most Pure and Mental Light, as I may so term it, and thereby understand them Intellectively, and with all perceiv that it doth so understand; and as it doth thus behold Sensible Objects, so also becaus itself is an Intelligence, it hath Intellectual Notions, and *Idea's* thereof, and much more of itself and other Intelligible things, and can Reflect upon itself and its own Operations, and understand what they are, by another and higher Act: and so likewise Abstract from all Singulars, and Particulars, and Contemplate them in their Universal Natures; as from *Album* and all or any *Alba* Concretely it can Abstract *Albedo*, and so from *Species* their *Genera*, and from all *Genera* the *Genus Generalissimum*, which is *Ens*, or more Abstractedly *Entity* (wherof there can be no Sensible *Species*, Images, or Phantasms, but only Intellectual *Idea*) and therefore it hath a special Art, whereby it can Command and caus the Imagination in another way to represent such Signatures thereof Sensibly, and which shall represent them Intelligibly to the Understanding; and that is *per Verba Mentis*, as we call them; for as in writing I make such Visible Letters, in Long-hand, or *Characters* in Short-hand, that are the Signatures of such Intelligible Sens and Meaning, which we call Words; or as we so Discours by Audible Voice and Articulate Sounds; so by these two Doctrinal Senses, or either of them, and by the Visible, or Audible Signatures thereof in the Imagination, which the Understanding doth Irradiate, and thereby read or receiv them, it doth understand its own Intelligible Sens and Meaning, which it cannot so do without them; and therefore if the Brain be hurt or distempered, not only the Imagination



tion, but the Understanding also is accordingly hindred in its Operations, and cannot Operate Immanently in itself, nor Contemplate any of its own Innate or Acquired Notions without such Instrumentality, in this Conjunct State : and the Brain of Man is therefore larger, and hath more of these Animal Spirits in it, then the Brain of any Beast or Brute proportionably ; becaus they are such Instruments, not only of the Sensitive Imagination, but also of the Intellective Understanding in Man ; and so if the Imagination be hurt or distempered by any such particular or general *Delirium*, as I formerly shewed, the Understanding is accordingly disordered : and commonly such as the Imagination Naturally is, such also is the Understanding ; but where there is a Prepotent Fausly, which will not be so Subservient to the Understanding, there is in such men an Extravagant Understanding ; and they, as I have said, may excell in any Works of the Imagination, and yet be almost Idiots in Understanding : which yet certainly is an Irregularity of their *Compositum*, and not according to the Natural Conformity of both these Faculeys in their Composition : And so is a dull and stupid Imagination a great Impediment to the Understanding ; but where there is an equal Excellence of both (which is very rare) there is a most accomplished Temperament of Wit and Judgment. Nor are either Sensitive or Intellective Souls all equal, but they have their Individual, and not only Numerical, Differences, as well as Specifical ; as there is no *Species* wherof all the Individual Bodys are of one and the same Size exactly, (which might make an Universal Standard) becaus God and Nature do in all things intend Variety, as I have shewed. Much less is there any Common Understanding, or *Intellectus Agens*, which doth Illuminate or Irradiate all particular Understandings, but there is only (as I said of *Anima Mundi*) Intelligence Generically and Metaphysically, which comprehends both Human and Angelical ; whereas every Individual Angel, and Man, understands by his own Individual Understanding ; and as God breathed the Intellective Spirit into *Adam*, so he Created in it and with it his Intellective Faculty whereby he did understand. Nor is there any other account to be given of Sensitive, or Intellective Notion, Perception, or Knowledg generally, but that God hath so Created them, and made them to be such as they are, as I have already shewed ; becaus their Substantial Spirits in themselves are Simple Essences

Immediately

Immediately Created by God, that is, Sensitive Spirits in the Beginning, and afterward produced in the Fifth, and Sixth Days, and the Intellectual Spirit of Man last of all, together with the production of his Sensitive Spirit, which is the most excellent of all Sensitive, as I have shewed: and so their Sensitive, and Intellectual Facultys, also Created in and with them are Simple Accidents and Essences in themselves, though their Operations are produced afterward by other Instrumentalitys in their *Compositum*; into which we may, and have thus farr inquired: and this Operation by *Species*, and Phantasms seemeth to differ from the Created Notions in the Facultys themselves, as *Nebuchadne-sar's* Dream, when he had forgott it, did from the Revelation thereof unto him by *Daniel* afterward; for so he had a Notion thereof in himself before it was Reveled, otherwise he could not have known it again when it was Reveled; and yet he could not so Revele it to himself: as the Understanding cannot understand any such Notion, which it hath Immanently in itself, without the Signatures thereof in and by the Imagination: yet the Innate Notions thereof are not like his, which was Acquired before, nor in any strict sens such as they are called, *Reminiscentia*; but Immediately Created and Imprinted in the Understanding by God and Nature, without which it should not have been any Natural Understanding: nor is it only an *Intellectus Patiens*, but such as can Actively of itself, and by the Instrumentality of the Imagination, Operate, and Exert them, as I have shewed: and so they are more rightly termed Anticipations, or *Prænotions*; which are the most Simple Apprehensions of the Soul, neither by Ratiocination, or Deduction from them Naturally, nor by Faith or Divine Illumination of God Supernaturally: and therefore to distinguish them from Reason, and Faith, I shall call them, *Prænotions*, and their Operations, Intuitions, such as the Sensation of Seing is, when the Ey beholds itself in a Glas; and the first and Fundamental of all, or any, of these *Prænotions*, is, that I am, or *Scio quod Sum*, whereby the Intellectual Soul is Conscious of its own Being Immanently in itself, or so as the Understanding understands Willingly, and the Will wills Understandingly, and therefore the most Innate and First Object thereof is its own Self; and though it is true, that it needeth the Instrumentality of Imagination to produce this, as well as any other



Notion, and that it cannot know that it is, but by an Intellection, which is an Operation; yet it so knows that it is, Conjunctly, in and with that very Intellection, as well as it knows that it Operates, as I have shewed; and as in order of Nature *Esse* is before *Operari*, so the Intellective Spirit must also in Nature first know that it is before it can know that it Operates, though it so knows both, in and with the same Operation in Time: nor is this the Knowledge of what it is Reflexively, which it Considers afterward by another Operation, but only the Conscience of its own Being, or that it is generally, which needeth no Argument or *Ergo* to itself; as *Cogitas*, or *Dubitas ergo Es*, is used by the Father, to convince another who was an obstinate Sceptike, and would deny his own Conscience, which none could manifest to himself, but only himself. But as this is the First Notion, so the Second is the Knowledge of the Operation, or *Scio quod Scio*, or that I am an Intelligent Being, and so are more Remotely and Consequentially the other Operations of the Intellective Soul, and Facultys or Powers therof, such as are comprehended in one word, Rationality; which yet doth not properly express them all, as these *Prænotions*, and Faith, and the rest, and which it ought to Include as well as Reason; and though it might be so conceived Inclusive of them all, yet it is only of such Proper Facultys, which are Accidents, and not of the very Specificall Difference of the Soul, which is Substantial, and such as we know not, and therefore cannot know the Substance therof any more then we do the Substance of any other Spirits, or of Matter itself, that is, only by their Proper Accidents. Now as I thus know that I am, and that I am a Knowing Being, by a most Simple Apprehension, which is only of this Simple Enunciation, *Ego Scio*, (for so by the Egoity, as they term it, I know that I am, and that I am my self and none other; and by the *Scio* I know, that I am Knowing) so becaus I know, that I am not the first caus of my self, but a Finite Creature, who had a Beginning of my Being, I know Rationally by Immediate Deduction from it, that there is an Infinite first Caus of my Being, that is, God; and becaus I know that I am such an Intelligence, whereby I can thus know God my Creator, (whom therefore I know to be also my Preserver, and Governor) I know my Soul to be an Immortal Being, made for God himself and his own Glory, who is Eternal, and will

will Eternally recompence me according to my prepared Capacity of Mercy or Misery: and though these be indeed Ratiocinations by way of Argument, and not such Simple Enunciations, as the other; yet becaus they are such Intimate, Immediate, and Cogent Consequences, we also call them Common Notions, as they both indeed appear to be such, in all Nations, and all Ages of the World, and by the Vote of all Mankind, and all Civil Societys therof; and are both of them so Complicated, that he who denys one, will also deny the other; and he who denys either, must presume himself to be wiser then *Solomon*, yea, then all men besides himself: and from these and the like Notions we may Consequentially deduce others, and so one from another, Syllogistically; which we call, Reason: but we call only the first and Immediate Deductions, or Ratiocinations, Common Notions; becaus they are so obvious and evident to any Man who hath Common Reason; whereas others, which are not so Immediate, and therefore not so readily to be apprehended by every Man, whose Reason is not so Subtile and Firm as to pursue a whole Chain of Inductions, and Ratiocinations, we do not therefore call Common Notions; becaus they are not so commonly known or apprehended by all; though all right Ratiocinations be indeed particularly as true in themselves, as right Reason is generally. And this I conceive to be Reason; and thus God, as it is said, having sett the World in the Heart of Man, that is, an Intellectual World of Knowledg of all things Intelligible, and of their Natural Causalities, and Effects, Analogys, Combinations, not only Singulars and Particulars, but also Universals, both Abstracted or Metaphysical, and Concrete or Homophysical, which is that general Notion or Knowledg, that I before mentioned to be Implanted in his Intellective Faculty, he is thereby thus Instructed to Reason and Discours from Causes to Effects, or from Effects to Causes, and according to Natural Analogy, and the like; and to make Propositions of Singulars and Particulars by some Universal Propositions, to which they are to be reduced, and the like. Again, as the Understanding of Man is an Intelligent Faculty, so Created by God in and with his Soul, and hath such First and Common Notions Imprinted in it by him Originally and generally, so God can more specially by Divine Revelation and Illumination write in it, as I may so say, any other Notions, which  
the



the Soul accordingly apprehending as true and evident as well as any others wherof it hath any such Innate Knowledge, it doth therefore Believ them, without any Ratiocination; and this kind of Knowledge is called Faith, wherof there is also a Natural Capacity in the Soul; for God doth not so make a Stone, Tree, or Brute, to Believ, but only Men, or Angels. And though these be several ways of Knowledge, yet it is all one and the same Knowledge, which is Acquired thereby generally, though of several Kinds; and the same Object may be known by all or any of these ways of Knowledge; as I know Intuitively, that I am, by a most Immediate Conscience of mine own Being, and yet I can also prove it to my self by my Operations, or any of them: and so I have proved that the World had a Beginning, and yet as the Apostle saith, By Faith also we understand it. But Sensitives have only a Module of the Sensible World in their Souls, which they being Perceptive and Living *Animals* may also know in a Sensible maner, as I have shewed; and so it is possible by such Signatures, as I have said, to make them understand Sensible things; as Horses, Dogs, Baboons, Elephants, are taught by Signs, to do many strange feats, which seem very wonderfull, as indeed they are the highs of all Bestial Docility; but yet as they are not Intelligences themselves, so neither can they apprehend any Intelligible things; as you cannot by any such Signes make them to apprehend God, or any Intelligence, Angelical, or Human; nor any Universal *Species* or *Genus*, and the like; nor any Universal Propositions, Connexions, or Conclusions, and the like; but only Sensible things, and of them only Singulars, or Particulars: neither do they Understand any thing, that is, apprehend any Sensible in an Intellective, but only in a Sensitive maner; for they cannot Intellectively Irradiate their Phantasms, so as the Understanding doth, whereby farther to Purifie and Sublimate them, and so behold them Intellectively with a Mental Light, as I have shewed: and I suppose these two Differences in the Understanding, and the like proportionably in the Will, to be sufficient to Discriminate us from Beasts; and that we need not to deny them any Perception, which they may have, that is, of any Sensibles, or in any Sensitive maner, lest they should seem too like unto Men, and come too neer us, who are thus Classically removed from them.

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The Will of Man is most Connatural with his Understanding, and hath its Instincts, as I may so term them, as that hath its Prænotions; not only general, but special; and thus as the Intellectual Soul first Knoweth itself, so it also first and most Naturally Willetth itself, and all that belongs unto itself: and as it may Naturally apprehend God by Deduction from itself, so it may Love him in order to itself, and also all other Intelligences and Moral Creatures: and so Man is *Animal Sociabile*, and hath a Natural Affection in himself more or less toward all other Men in order to himself, and therefore first and principally to such as are neerest to himself, as Wife, Children, Kindred, Countrymen, and the like: which Natural Affections are all founded in that Original Institution of Matrimony, as I have shewed, and which is indeed the Fountain of all Families, Nations, and the like. And upon the Foundations of these First Notions and Instincts, and the Immediate Consequences thereof, are all Arts and Sciences as so many Superstructures built; which therefore are laid down as *Principia*, and *Postulata*, that none may deny who is Man, or a Rational Creature; or if he shall, there is no farther Enter-course of Reason, or Society to be held with him, but he is to be rejected as an Irrational Brute. Also the way of Volition is Analogous to the way of Intellection, not only in these Prænotions and Instincts, and Rational Deductions, and Volitions, and any Natural Assent or Consent, but in the Supernatural Inclinations thereof, according to Divine Illumination, or Faith: for as that is not only a Light, or Revelation of the thing to be Believed, but it is an Irradiation also of the Understanding, that is, of the very Sight thereof, which is thereby farther Illuminated, Purified, and Sublimated in its own Nature, so as to See or Believe it, not by adding any new Faculty to the Soul; for Faith is a Natural Faculty thereof, or way of Knowledge, as well as Reason, or Intuition, but by such Illumination, which is according to the Natural Capacity thereof, and not contrary unto it; though the Illumination, that is, both the Light Reveled, and also the Sight of the Understanding Purified and Sublimated, be so far Supernatural; so Divine Inclinations of the Will are not only as Moral Perswasions or Tentations, which may prevail, or not, but such Purifications and Sublimations of the Will, whereby it is also enabled to will, or Actuate its own Willingness accordingly;



which is also according to the Natural Capacity thereof, and not contrary unto it, though the Inclinations be so farre Supernatural. Again, as the Understanding cannot Operate without the Instrumentality of the Imagination, so neither can the Will; for it follows the *Dictamen* of the Understanding, and therefore Operates only with it and by it; and as the Imagination doth Spontaneously Perceiv, and the Appetite Perceptively Affect, so the Understanding doth Voluntarily Understand, and the Will Understandingly Will: and though the Appetite and Will, after they are Illustrated by the Imagination and Understanding, can Executively Move their own Instruments; yet as the Appetite can only Move its own Motive Spirits, and thereby the Body, and so thereby other Bodys; so the Will of Man in this Conjunct State, using the Instrumentality of the Appetite, as the Understanding doth the Instrumentality of the Imagination, can only so Move by and with the Appetite. And as there are several other Facultys of the Imagination, as Judgment, Ingeny, Memory, and the like, and of the Appetite, as all the Affections, and the like; so there are such Analogous Qualitys, not only in Human, but also in Angelical Understanding, and Will; becaus, as I said, they are all within the Region of Life; and these are Living Facultys, and such without which Life should not be Life generally, that is, a Knowledg of what they do, with a Delight in suitable Objects and Operations, and Abhorrence of the contrary; which indeed is Life, and is by this double Operation, or Super-operation of the Living *Animal* upon its own Operations, as I have often said, wherof no Inferior Nature is capable; and therefore, as I said, Vegetatives do not thus Live, and much less Elements, or Matter: for though they also Operate more or less, and by those Principles, which the most Wise and Powerfull Creator hath Imprinted in their Natures, can produce such Constant, Regular, and Oeconomical effects, in their Simple Operations accordingly, yet they cannot Perceiv or Review their own Operations, nor have any Sentiment, or Enjoiment thereof, as Sensitives, and Intellectives, which are Living *Animals*; but are as the Dead Carcass of the World, wherof these only are the Living Spirits: and thus Sensitives live a Sensitive, and Intellectives an Intellective Life. Now though we do not know, nor will I presume particularly to declare, the way and manner of Angelical Operations;

Operations; yet generally, as I know that they are Intelligences, or such Intellectualive Lives, so I know they have Understanding, and Will, and all the Analogy of Life, which the Scripture most plainly declareth unto us; and much more that they are Creatures or Created Natures as well as others; and that they are no such *Dii Minores*, as Platonists, and some Platonical Christians, would make them: and though they be Immaterial, and most Spiritual of any Spirits, yet they are only Spirits Generically, as others, and are no such Phantasms and Spectres, as Scholemen would make them; nor so wholly unconcerned in the Matter, and the Univers of all Common Nature, and Entity, and Finite Bounds therof, which God hath sett to all Substantial Beings, and to all Quantities, and Qualities therof; wherefore they can no more ascend above the Circumference, then descend below the Center of the wstole Globe of the World; becaus there is no *Ubi*, or Locality, beyond it; and Locality is a Common Accident, or Affection of all Created Beings, as well as Time, and Number (and certainly no Angel is Elder then he is, or more then One) nor can they Nullify or Evacuate the Nature of Extension, Density, or Gravity, so as they should not be more or less such to them, as they are in themselves, and as well as they are unto all others, as I have shewed. But as we may conceiv by all other Spirits what they are, that is, Substantial Activities; so we must also acknowledge Angels to be the most Spiritual of all Spirits; and though, according to the Oeconomy of Universal Nature, they are concerned in the Matter, or Body of the World, as well as others; yet neither are they so Immersed as Elementary, nor Rooted as Vegetative, nor United as Sensitive, nor Confined therein as Human Spirits are; which can neither Understand, Will, nor Move themselves, otherwise then by the Instrumentalities of their Bodily part in this Conjunct State, as I have shewed: for though Angels also are parts of the Universal Oeconomy of the World, as I said, yet they have their own Private and Individual Oeconomy wholly in themselves, and need none other Instrumentalities, whereby to perform their own Operations Immanently, and they can also Transiently Operate upon all others in a most Powerfull and Wonderfull manner: but as they are Spiritual Substances, so they have their



Accidental Facultys and Operations, and do not Operate by their Essences, as God, who is a Pure Act; whereas all Created Operation is between Accidents, which were Created for that very end and purpose, that Substances might Operate by them, and that they might mutually Operate upon them by their own Accidents, as I have shewed. And though Angels Operate by their own Inherent Facultys and Qualitys Immanently in themselves, and may produce their own Contemplative *Ideas* in themselves, and Move their own spiritual Substances, yet certainly they cannot Contemplate any External Objects without some Emanant Irradiation therof whereby they bring back to themselves the most Pure and Refined *Species* of the Object, and probably more Pure then the Human Understanding doth Contemplate in the Phantasms, which it doth Irradiate, by its own Inherent Light: and so they can Move Corporeal things, not only by their Inherent Qualitys, as they may Bodys, which they Possess, but probably by an Eradiation of their Motive Power: for if Inferior Natures can so Move at a distance, as Emanant Heat can Attract (and so some can suppose that the Sun by its Rays may Move the Earth about him, though, as I said, that Motion of Heat is only Attractive, and not Circulative, nor hath it any Imaginable strength at such a distance so to move the vast Body of the Earth about it) certainly Angelical Power is farr more both Intensive, and Extensive; which, whatsoever it be, I shall not presume to determin; but rather inquire into that which doth more concern us, that is, what knowledg they may have of our Cogitations, or how they Tempt us? and as I conceive, that our Understanding doth read in the Book of our Imagination and Phantasms therof, which it doth Irradiate, as the External Light doth a Book wherein we read; so Angels also may read therein the same *Verba Mentis*, or Signatures, though they cannot know how we Irradiate them, or Animadvert, or what Apprehensions we have of what we so read, nor what are the Immanent Actions, Motions, and Inclinations of our Understanding or Will, otherwise then by the Execution and Effects therof, (for so only God is *Car-diognosces*.) And as they may thus read in our Book, so they may also write therein; as first they may Actuate any Sensible *Species* in any of the Standards, and thereby Irradiate the Animal Spi-  
rits,

pits, and so present them to the Imagination; which yet may Animadvert, or not, as it pleaseth, becaus it is Spontaneous; also they may Actuate the *Species* Immediately in the Animal Spirits, and present them to the Imagination so strongly and vehemently, that they may seem thereby to appear unto us in any Visible shape, or to utter any Audible Voice, or the like: and they may stir up Bodily Humors within us, and the Motive Spirits, and Fluxes or Reflexes therof, to tempt, but cannot force the Will: and if they appear outwardly, it must certainly be by assuming some Superficial Bodys; for they have no such Sensible Qualitys, or *Species*, or Phantasms, in themselves, and therefore must borrow some Bodys that have them. Now though they cannot force us to Animadvert their Tentations, and much less Incline our Wills, yet this is a very large and wide entrance, which they may thus have into our Souls; but though I suppose that they have so now generally, yet I also conceiv, that they could not invade Man in his first Creation; (as *Adam* was restrained from eating of the forbidden fruit,) and also that they cannot now invade us, or our Lives and Estates, (as otherwise generally they might) being restrained by the Divine Power, as before by the Divine Command, as *Satan* himself told God, that he had made an Hedge about *Job*, and his house, and all that he had, on every side; and he could not infest him, untill, nor any farther, then he afterward obtained Licens from God: and I conceiv, that ordinarily God doth suffer him to tempt great Sinners, who give themselves up unto him and his Government; and so God suffered a Lying Spirit to seduce *Ahab*, and his false Prophets, and the Devil entred into *Judas*, and the like: And thus Witches by their Invocations, and others by their Execrations, and the like, may themselves open the door unto him; and he doth more or less make his approaches unto us, in a Spiritual or Corporeal maner, as we give him access by our own Invitation, Admission, and Entertainement of him; and when he appears to men, yet commonly he doth not speak untill he be first spoken to by them. Thus the Angels excell in Knowledg and Strength; and the hight of all the Excellency of the best of Angels, is their Knowledg and Love of God, the Infinite Creator, whose Menial Servants they are in Heaven, and are said always to behold the Face of God; not, as some conceiv, that they can possibly have any



quate *Idea* of Infinite; becauf they are Finite; and fo they are alfo laid to cover their Faces, as being dazled and amazed with the apprehenfion of Incomprehenfible Infinity: and I fuppofe, there is no fuch prefumptuous man who doth, or can conceiv, that he knows more of God heer, then an Angel in Heaven really knoweth, that he doth nor, nor can he know of him there. Yet their beholding the Face of God, is, as I conceiv, not by Deduction or Argumentation, as we now know him darkly, as in a Glafs; but by a Divine Irradiation upon their Intellects, according to the utmoft Capacity of Intuition or Vifion, whereby they fee God by his own Light, as we fee the Sun: and as they fee him as he is, who is Infinite, fo they do alfo moft humbly and fenfibly acknowledg that there is Infinitely more in him then they do, or can fee, or knew of him: wheras we afcend to the knowledg of Gods Infinity Naturally by fteps and degrees; and as we Abstract Universals from all Singulars and Particulars, whereby we come to the Knowledg of Metaphyfical Entity, and Bonity, fo we alfo Abstract from him all that is Finite, and thus know him to be Infinite, the Incomprehenfible, Neceffary, and Universal *Jehovah*; not only adequate to our utmoft Apprehenfions, but vastly exceeding them; and not only exceeding them, but Infinitely Different from all that is, or can be, conceived of him, *God blessed for ever*. And this Knowledg of God, who is the higheft and greateft Object, according to the utmoft Capacity of a Finite Underftanding, and the Love of him, who is the chief and only true Good, is Naturally in all men Explicitely, or Implicitely; becauf every Human Soul is capable therof, and muft acknowledg it, as I have fhewed; which doth fo enlarge it, that all this World, and a World of Worlds, which are all Infinitely lefs then God, can never fatisfy it, fo that neither the Underftanding nor Will of Man can Terminate in any other thing, but only in God; and heerby it plainly appears, that though the Soul of Man be not Infinite, as God only is, yet it is moft strangely and wonderfully Indefinite, becauf nothing lefs then Infinite God can fatisfie it; Yet I fuppofe alfo, that it is not Properly Indefinite, as Poffibility is, which is adequate to Divine Omnipotence, and wherof we cannot, either in our Underftanding or Will, go to the utmoft Extent Affirmatively, yet certainly Negatively nothing lefs then Absolute Poffibility, and Divine Omnipotence wherin it is founded, can Terminate

nate the Soul of Man which can invent other and more Worlds, like *Anaxagoras*, and wish to conquer and enjoy them, like *Alexander*.

V. I may not omitt to speak of the Image of God in Man, which is so Expressly mentioned, and Emphatically repeated in the Text: though, as I said, God being Infinite, and Infinitely Different from all Finite Nature, there is not, nor can there be, any thing like unto him, in any Intuitive or Representative maner whatsoever; as the Prophet saith, *To whom will ye Liken God, or what Likenes will ye Compare unto him?* but only Demonstratively, and Doctrinally; whereby an Intellective Spirit may know, that there is such an Infinite Being, as I have shewed: and so the whole World, and every Created Being therein doth prove him unto us Argumentatively, though nothing can declare him Representatively: and therefore God doth justly abhor all such Representative Idolatry, and is to be conceived only by an Intellectual *Idea*, which is the highest, and purest, and only lawful *Idolum* of a Deity. And thus as the Great World, so Man, as he is a Microcosm, is such a Demonstrative Image of the Creator, becaus he is a Collective and Representative Image of the whole Creation; and he is so not only in his Intellective Spirit, but also in his whole *Compositum*; and therefore God pronounced Murder, which is a violent Dissolution therof, to be Capital; for in the Image of God Created he Man. And though Man in himself, by his Intellective Spirit, doth Govern and Rule over his Sensitive part, and can rectify the Errors therof, or restrain the Inordinate Motions therof (whereby I have plainly proved it to be another Spirit in itself, and distinct from the Sensitive Spirit in Man), yet by his whole *Compositum* he doth Govern and Rule over all Inferior Creatures, and therein he is the Image of God, as it followeth in the Text, *and let them have Dominion*; and so *Ovid* well expresseth it,

*Finxit ad Effigiem moderantem cuncta Deorum.*

and thus, as I said, Man was constituted Lord over the Works of his hands, and made Gods Viceroy heer on Earth, by a most Lawfull and Natural Sovereignty; and accordingly God hath Crowned him with Glory and Honor, and Invested him with Roial Power; both in his Mind, which is more Politike and Prudent, and more Ingenious and Mechanical, then any Brutes,

and



and also in his Body, which is of an Erect and Sublime Stature, and of a more Excellent Temper and Organism, especially his Hands, whereby he can Use and Manage any other Instruments farr otherwise, and to more advantage, then they: and as Man is *Animal Politicum*, so Mankind by Conjunct Wisdom and Power doth Subdue all Wild Beasts, and Nations of Brutes. But the Intellective Spirit of Man is a more Special Image of God in itself, as it is an Intelligence, and hath in itself an *Idea* of Divinity, and a Capacity of Loving and Enjoying God, wherof all Inferior Natures are Incapable; and indeed we may justly admire how a Finite Intellect should be in any maner capable of apprehending Infinite, or of having any Communion or Conversation with God, who is Infinite: and this our very Subordination unto him is farr higher then our Sovereignty over all Inferior Creatures; which, as they were made to Serv us, so also to Demonstrate and declare his Glory, shining in them, unto us, who as Gods Stewards should gather in all the Revenues therof from them, and Immediately return it unto himself: wheras their Immediate Goodness and Perfection is thus to be Subordinate unto Man, who by his more Divine Contemplations, and Lawfull Use of them, and his Glorifyng of God the Creator thereby, doth Sanctify them; and by his own Immediate Knowledg, Love, and Enjoyment of God his Creator, is himself as it were Deified; and indeed this is the true Spiritual Image of God in the Soul, which is the highest Exaltation therof, and such a Sublime Mystery, as well deserveth a more particular Explication. And first we must know, that the Knowledge, and Love of God, as God, must be above the Knowledge, or Love of our very Self; becaus God is Infinitely above us; not only in himself, but in Relation unto us, as he is our Creator, and we his Creatures; whereby we are made wholly Subordinate unto him, and not he unto us: wherefore to Know or Love him in order to our Self, is no true Knowledg or Love of God, as God, but Blasphemy, and Impiety: and yet, as I have shewed, Self is Naturaly the Begining of all our Knowledg, and End of all our Love, and no Man Naturaly can Know, or Love God, otherwise then in order to himself; which is to make Self his God, or his Chief and Supreme, and God only to be Subordinate therunto: nor can any  
Nature

Nature whatsoever Naturally of itself ascend above itself (as Water cannot ascend above its Levell) otherwise Self should be more then Self, which is Impossible. Now whereas the Law of God commandeth us to Exalt him above ourselves, and to Love him with all our *Valde*, in such a Transcendent and Supernatural manner, we must also conceiv, that he doth not command Impossible-tyes; but that there is a Natural Capacity in our Soul of being thus Exalted above our Natural Self, which must be by a Supernatural Power so Exalting us; and becaus it is the Exaltation of our Intellective Understanding, and Will, therefore it must not be only a Passive or Receptive Capacity, but with a most Conscious Knowledge, and Freedom of Will; by a Revelation of the Light of the Object, and also by an Illumination of the Sight of the Understanding; and not only by a Moral Perswasion, but also by a Divine Exaltation of the Will. And thus Man, being made such an Intelligent Creature, had a Natural Capacity of being so Exalted toward God; and becaus it was most Congruous that this Capacity should be filled and completed, in, and with the very Creation of his Soul, which was made for this very End, and which, if it had not attained, God had made it in vain, and so it had been made, though not Sinfull, yet Monstrous, and not Perfect and Good, therefore it is said expressly, that he thus Created Man in his own Image, that is, this Image of Holines, as well as in other respects; and as I have shewed, how every other Nature is Exalted by a *Melior Natura*, which is Superior unto it, in the Scale of Nature; as Matter by Elementary Spirits, and they by Vegetative, and they by Sensitive, and the Sensitive Spirit of Man by his Intellective; so is his Intellective Spirit also Exalted by the Divine Spirit of God his Creator; and as the Animal Spirits in his Body are so many times Refined and Sublimated to that hight as to be fitt Instruments of his Intellective Spirit, by the Irradiation therof; so is the Understanding, and Will of Man, thus Sublimated by the Irradiation of the Divine Spirit; and as the Understanding, and Will of Man, when he was first Created, did Perfectly Command and Rule his Imagination and Appetite, and they did also Perfectly Obey, with their own Natural Perception, and Spontaneity; so was the Soul of Man first Created thus Obedient and Conformable to the Divine Spirit, most Knowingly and Willingly, with its own Natural Intellection and Volition: and thus, as it is said, *God made Man Upright,*



right, and in his own Image, which was that *Aliquid Divinum* in him, whereby he was so made, *Deiformis*, or as Scripture more fully expresseth it, *Partaker of the Divine Nature*, by resolving himself into his Creator, Intellectively Knowing, and Willingly Loving God, as God, or as he is in himself, and as he Loveth himself above all. But I do not conceive that this Life of Grace (as it is also called the *Life of God*) is so expressed by *Spiraculum Vitæ*: for this History of Creation intendeth not Accidental, but rather Substantial Lives, as the Poet termeth them,

*Inde Hominum, Pecudumq; genus, Vitæq; Volantum.*

Also as Naturally the Imagination, and Appetite, being in themselves Perceptive, and Spontaneous Facultys, might Rebell against the Intellective, and they did Actually so Rebell in the Fall of Man; so also, (though this Original Grace was so farr Supernatural) there was still a Natural Capacity in his Intellective Understanding and Will, (which are in themselves Naturally Knowing and Willing Facultys) to Rebell against the Divine Spirit, (who also if he pleaseth is Irresistible, because he is God) and they did Actually so Rebell in his Fall; whereby his Soul did sink down into Self, and now hath not, nor can it Naturally, have, any Knowledg or Love of God above itself, as I have shewed. And this is that which the Scripture commonly calls Flesh, as it is opposed to the Divine Spirit, and the Supernatural Work therof in the Soul; and so those two are said to be contrary one unto another; and not only different (so as the Corporeal Flesh of a Sensitive Body is distinguished from the Sensitive Spirit, and so is termed the Flesh of Beasts, Birds, or Fishes; nor as the whole Sensitive *Compositum* is sometimes distinguished from Intelligences, as it is said, that Horses are *Flesh, and not Spirit*), but as the whole Human *Compositum*, both in the Sensitive, and Intellective part therof, is now Naturally opposed to the Divine Spirit, as I have shewed: and so, the Apostle saith, *The Natural Man* (or the Animal Man Naturally) *receiveth not the things that are of God, for they are Foolishnes unto him; neither can he know them.* (or conceive and receive them) *because they are Spiritually discerned.* And all this may most plainly appear by the Renovation of this Divine Image by the Spirit of God, which is called the *New Creature*, and *New Man*, which is renewed in Knowledg after the Image of him that Created him: though I do not suppose it to be by any Proper Creation of any new Faculty, or Power in the

the Soul, but by Improper Creation, that is, by Supernatural Irradiation of the Divine Spirit, such as the production of any Accidental Qualities out of the first *Chaos* in the Six Days was by the Divine Power, and wherof, though there was an Entitative Potentiality before, Created in and with the Substance, and Subsisting and Latent therein, yet it could not be produced into Actuality, without the Immediate Power of the Divine Spirit, as I have shewed, and that therefore it is termed a Creation, and is not, as Natural Generation, which is only production out of a second *Chaos* of Potentiality, as I so term it, by a Natural Power Transmitted and Delegated to the Specificall Creatures afterward by the Divine Benediction, whereby they can so Generate others; and so the Apostle also saith with an expresse reference to the very first of those Works of Improper Creation, *God who commanded the Light to shine out of Darknes hath shined in our Hearts, to give the Light of the Knowledge of the Glory of God*: wherefore as that Light, which first shined out of Eternal Darknes, was so produced not by a Proper, but Improper Creation, as I have shewed, and by such Improper Creation, and not only by a Natural Generation, as the Light of Fire, or Candle, is now Generated; so is Regeneration the Immediate Work of the Divine Spirit, not by Proper, but Improper Creation, and by such a Creation, and not by Natural Generation; as our Savior saith, *That which is born of the Flesh is Flesh, and that which is born of the Spirit is Spirit*. And this work of the Divine Spirit in the Hearts of Men Regenerate is the Divine Life of the Soul: thus being indued with this Divine Grace, and so exalted far above, not only the Sensitive, but also the Naturally Intellective, and the whole Animal Life therof; and so is termed, *the Life of God*: and this Regeneration of the Soul a Translation from Death to Life, which is indeed a most Miraculous Work, and though not any Proper Creation of any Substance or Faculty from Absolute Nonentity, yet is an Improper Creation of the most excellent of all Created Qualities, as I have shewed. And in this respect it is somewhat more, that it requires a Conjunct Irradiation of the Divine Spirit continually (as the Diaphanous Air, doth of the Light and Heat of the Sun) which is wholly Supernatural. And in a Spiritual Life, or the Union and Communion of the Soul with God, even the wisest of Philosophers have rightly placed the true Happiness of Man; though they were ignorant of such Supernatural



Irradiation by the Divine Spirit, and of *Jesus Christ* the Redeemer, through whom only it is to be obtained. Who is indeed *The Brightness of his Fathers Glory*, and express Image of his Person, Infinitely, and Incomprehensibly, as he is the Essential, Natural, and most Univocal, and Unigenous Son of the Father, or the very Intrinsecal *Verbum Mentis Divina*, who also hath Invested himself with the Human Nature, as the *Epitome* of the Universe, and which was therefore made such in order to him, as I have shewed; and so the Apostle stileth him both together, *The Image of the Invisible God, and Firstborn of every Creature*. And as I said, this very Consultation of the Trinity about the Creation of Man was in order unto Christ; as there was afterward another Consultation of God about the Creation of Woman in order unto Man: And it is also said, *Let us make Man in our Image, after our Likeness*; as it is said of *Adam*, that he begatt a Son *In his Likeness, after his Image*: both which Expressions are not Supervacaneously Impertinent; but as there is a mutual Resemblance between any two Similar things, so it is heer Doubly exprest, and sometimes only Singly, and Indifferently, by Image, or Likeness. Now as there are Combinations between all Created Natures, even Angels and Matter, as I have shewed; so the Image of Holines is the Combination, or Communion between the most Spiritual Nature, that is, the Intellective, and God the Creator. But the most Admirable and Incomprehensible Combination is the Personal Union of *Jesus Christ* God Man both Creator and Creature in one Person. Also *Adam* only was first Created Sole, before *Eve*, or any other, as he alone was generally, like any other Man, a Microcosm, and as he was specially and Personally the Prototype of *Christ*, who was to be a Man himself, though he was the Seed of the Woman: and though Woman also, as well as Man, being partaker of the same Human Nature; was generally made in the Image of God, and so it is commonly Interpreted, God Created *Adam*, or *Man* according to his Kind, *In his own Image*, yet it is afterward repeated again more specially and Personally concerning *Adam*, *In the Image of God Created he him*, and then, *Male and Female Created he them*: and thus *Christ* is called, both the Second Man generally, and the Second *Adam* Personally, and so the Apostle also expressly distinguisheth, saying of Man, that *He is the Image and Glory of God, but the Woman is the Glory of the Man*: and *Christ the Head over all things to his Church*; even as the Man is of the Woman.

man. And thus all that was in the First Creation of *Adam* did prelude to *Christ*, as I have said ; who is the only true, Uncreated, and Created Image of God both in his Essence, and in his Operations.

VI. That there is a God, and that the Soul of Man is Immortal, are two Fundamental Points of Religion, as I have shewed ; and as in my first Discours I proved the first, so I shall now in this last prove the other ; and between these two comprehend all the rest, the knowledge wherof is only in order to these great Ends of Man, that is, the Glory of God, and his own Eternal Beatitude. But though I have Mathematically proved a Begining and Creation of the World, and consequently a Creator ; becaus the Univers, which contains all in one, doth afford a Mathematical *Medium*, whereby I might so prove it (as I could also prove it Physically or Morally) and I rather chose that way of Probation, becaus the Divine Wisdom, which lays Natural Philosophy as a Foundation of Divinity, doth thus offer the Begining as an Evidence of both ; and becaus some men, who pretend most to Evidence, require such Mathematical Demonstration, which yet may not be exacted, nor expected in the Probation of any thing that is not Mathematical, as the Soul is not ; and which, though it be Immortal, yet is not indeed such in Present Actuality, but only in Perpetual Futurity. And as I have proved other Physical *Theses* Physically, so I shall now prove this, which concerns a Moral Creature, Morally, according to the Nature of the Subject Matter ; when I have first explained, what I intend by this Term, Immortality ; the very Explication wherof, as of any other Terms, whereby Truth is presented in her own Naked Simplicity, doth, by the Aspect and Eradiation therof, carry with it a very great Evidence of the Thing. Now according to all my former Discourses, it is not, nor can it be any Question, whether all Spirits whatsoever, Elementary, Vegetative, or Sensitive, as well as Matter, be Immortal in their own Simple Essences, Substances, and Specificall Natures ; for they, as such, are Ingenerable, and were Properly Created ; and therefore cannot be Corrupted, and shall not be Annihilated : but as their *Composita* were first Improperly Created, or Originally Generated, and so are Successively Generable, they are also Corruptible ;



and so undeniably the Intellectual Spirit, as it is one Substantial Principle of the Human *Compositum*, is also Incorruptible, or Immortal. Again, as it is no Question whether all Generable *Composita* be not also Corruptible, so it cannot be denied but the Human *Compositum* of Body and Soul, as it is Generated, may also be Corrupted, and so the Sensitive Vegetative and Elementary Spirits thereof return into their *Chaos*, which we call the Birth, and Death of Men : and so as the Human Spirit is Created, it may also be Annihilated, and the like : but the true and clear State of the Question is, Whether the Intellectual Spirit of Man considered in itself, and without any Conjunction or Composition with his Sensitive, Vegetative, Elementary Spirits, and Matter of his Body, or any of them, be Immortal, or Mortal ? that is, whether it can, and doth, as an Angelical Spirit, continue Separate in its own Personal Individuality and Oeconomy after Death, or the Dissolution of the Human *Compositum* ? which plainly is the Immortality of the Soul ; or like other Inferior Spirits, when the *Compositum* is dissolved, doth thereby and therewith also cease to be such as it was before in itself, Individually and Oeconomically ; and so having no such Individuality or Oeconomy in itself Separately, and without the *Compositum* but only in and with the whole *Compositum*, is dissolved together with it, and the Substance thereof return into the Dust, as its own Element, and *Chaos*, wherein it was first Latent and there is Confounded and Coagulated with others ? (out of which again, not the same Individual and Oeconomical Spirit, but another in a new *Compositum* may be Generated) which is the Corruption or Mortality thereof ; and such new production another Generation. Now that the Intellectual Soul of Man is not so Mortal or Corruptible, but Immortal and Incorruptible, is the purport of the whole Scripture ; because, as I said, it is a Fundamental Point of Religion ; and whosoever believes Scripture to be the Word of God, may not, nor can he deny it ; but he who will deny the one, must first deny the other ; that is, that the Scripture is the Word of God. Yet I shall more specially produce one Text, because it doth include with the Divine Authority also some Natural Reason of the Thing. The Wiseman, speaking of the Death of men, saith, *Then shall the Dust return to the Earth, as it was ; and the Spirit shall return to God*

God that gave it: wherein he plainly declareth that the Body, and all the Bodily part, (which he termeth, Dust, as God so called it at the first, becaus he made it of the Dust of the Earth and such generally as the Body of Man is in the very Instant when his Intellectualive Soul departeth out of it, and that certainly is a Body of Flesh, and not only a *Lutea Imago*, as I said) doth assoon as the Instrumental Life of the Sensitive Soul ceaseth, fall to the ground, and is more and more by degrees Corrupted and Putrefied, untill it be resolved again into Dust, and the Sensitive Spirit is also Confounded in the *Chaos* therof and Coagulated with others, (as it is also said, *Who knoweth the Spirit of a Man, that goeth Upward, and the Spirit of the Beast, that goeth Downward to the Earth?* and indeed we cannot know Spirits as they are in themselves, nor Pure Matter as it is in itself, otherwise then by their Accidents, as I have shewed) that is, the Intellectualive Soul returns to God, who gave it by Immediate Inspiration, and Proper Creation; and as he gave it, so he receiveth it; for as it was not produced out of the Earth, like the Sensitive and Vegetative Spirits, so neither doth it return thither again; that is, as it was not Generated, so neither is it Corrupted: and the very same Probation, whereby I have proved it Ingenerable, doth also prove it Incorruptible: as Angels, who are Ingenerable, are also Incorruptible, becaus they have no Substantial Composition, and therefore nothing to be Dissolved or Corrupted; but every one is a Complete *Individuum*, and Person in himself; and so though the Human *Compositum*, which was composited of Body and Soul, may be Dissolved, as I have said; yet the Human Soul, which is also an Intelligence and Life in itself, was Immediately Created such by God, and therefore cannot be Dissolved; and was not produced out of the Earth, and therefore may not return unto it, but to God that gave it. Thus as every *Compositum* is as it were an Aggregate Corporation, so made according to Natural Polity, as an House is by Art; and when the Members or Parts of the Corporation, or House, decay or are dissipated, the very Corporation, or House, ceaseth to be such, and the Members or Parts therof are Confounded or scattered among others; and as an Angel is as a Sole Corporation, which cannot be so Dissolved; so Man is both an Aggregate Corporation, like others, in a Common Capacity with



with them, in his Conjunct State, and also a Sole Corporation, like an Angel, in his own Private Capacity by himself, and in his Separate State: and as the others could not be Individuated, or made such Natural Corporations, or *Composita*, without an Improper Creation, which was their Original Generation; so neither can these Sole Corporations of Angels or Men, which were made such in themselves Immediately by God, be Dissolved without a Divine and Supernatural Power, which only can Annihilate them. But, as I said, I shall rather prove the Immortality of our Souls Morally, by that Argument of *Plato*, which is very Rational and Philosophical, and may be farther improved by Christianity. Certainly God the Creator and First Cause of all things is also the utmost End thereof; and he is Immediately served only by Angels and Men, because they are Immediately Subordinate to him, and the only Intelligences in Nature, which only have any Conscience or Consuance of him; and therefore can only perform that Immediate and Spiritual Service, which he requireth, and which is fitt and Proper for him who is a Spirit, and will be so worshiped: and so, as I said, they were Created and appointed to gather in all the Revenues of his Glory, and to render it to himself, as well as to Glorify him by their other Personal Services: Wherefore if these Intelligences should perish or cease to be in their Personal Individualities, though their Substantial Principles might not cease to be, but be Confounded or Coagulated as others, yet because they should not so any longer continue to be the same Persons (as no *Compositum*, when it is once Dissolved, doth Naturally return again to be the same) but their Personalities should so be destroyed; then it should be all one, in respect to this great and utmost End of Creation, as if they had never been Created: for as if God had Rested from all his Works after the Fourth Day, and before any Sensitives were produced, and neither they, nor Angels or Men had been Created, all the other Creation had been void and vain in respect to itself, as I have shewed; because there had been no Spectators to Perceive or Enjoy it, so if Sensitives also had been produced, they could only Behold and Enjoy the Creation, but not render any Glory thereof unto God the Creator, of whom they are wholly Ignorant; and so all of them had been made in vain, because none of them could attain the very End of Creation,

which

which is the Glory of the Creator : and though they had so continued to be for ever, yet the very End of their Being had been Nullified ; yea though they were made Perfect and Good in themselves, yet they had not been Sanctified or Sublimated to any Divine Use or Service, nor could God have so pronounced of them all, that they were Very Good ; nor would he have so Rested untill he had so reduced them all to himself, and his own Glory ; nor Instituted such a Sabbath of Spiritual Rest, wherein he did Review and Rejoice in all the Works which he had wrought, and from which he received the Emanant Reflections of his own Inherent Glory, according to the utmost Capacity of Finite Nature : Thus also if the Intelligent Natures of Angels, or Men, should be Mortal, then all the Manifestations of his Glory to them, or by them, should with themselves cease and Vanish away ; and whereas they also do Personaly manifest his Divine Honor, or otherwise Dishonor him, so he, who is the Great King, according to his Roial Greatnes and Goodnes will recompens them with Reward, or Punishment, wherunto Piety and Impiety, Virtue and Vice, do Moraly Relate ; and in the Distribution of his Mercy and Justice accordingly his Everlasting Kingdom of Glory doth consist : and therefore also all his Subjects therof must be Immortal ; otherwise after they had thus Served or Disserved him, they should Escape him, and lose their Rewards or Punishments, and he the Glory therof : for so the same Man or Angel should cease to be, and the Name of his Person, as it stands in Gods Book, be Obliterated, and so all those Eternal Monuments of his Mercy and Justice be Defaced. Though it is true, that all Men, and all the Angels in Heaven, or Devils in Hell, can add nothing to, or diminish from Gods Uncreated Glory, which he Eternally Enjoiet in himself, and which is Immutable as Himself ; nor was the World made for any such End, but for the Created Manifestation therof, which accordingly as they do Advance, or Eclipse, by serving him, or sinning against him, so he also according to his Created or Reveled Law of Justice will most certainly Retribute unto them. And this Moral and Political Argument is very much inforced by the consyderation of Gods present Providence and Administration, which is as the Political Chaos of the World Future, and seemeth to be as Inane and Inform ; and yet out of it will he produce all the Beauty and Glory of the other World. Thus *no man knoweth either Love or Hatred by all that is before them.*



them; All things come alike to all; There is one Event to the Righteous and to the Wicked. But also, It is appointed for all men once to Dy, and after Death the Judgment; so that Death shall not Prevent, but Prepare for Judgment; as the Prison is not to Conceale, but to Secure the Malefactor. And I am so confident of the Moral Conviction of this Argument (which as I said is a Common Notion, deduced from the Immediate Knowledg of the Nature of our Intellective Soul, and of God our Creator, Preserver, and Governor, collated together) that no mans Conscience can outface it, but only his, who doth not, or will not regard it: and unless such who can deny all Polity of Nature, and the Subordination of all Inferior Natures to Man, can also be so Impious as to deny the Immediate Subordination of Men and Angels to God their Creator, I do not see how they can evade it; which if they can, they do also thereby elude all Religion and Worship of God. Nor are Sensible Experiments wanting, though I will not offer any Direct Testimony therof to such who can deny Divine Authority, and from whom therefore I may not reasonably expect, that they should believ any Human Reports or Records of the Survivorship of the Souls of men after Death: and *If they will not hear Moses and the Prophets, neither will they be perswaded, though one rose from the Dead:* and should tell them this very thing, that he hath rose from the Dead: but I shall therefore rather offer another common Experiment among the Living, from which I shall deduce a Collateral Evidence of this Truth: and that is Self-murder in Man, and in none other Inferior Animals, who will not so destroy themselves, Perceptively, and Spontaneously, and being in no *Delirium*, but in sound Health, and Strength of Body, as Man very often doth most Wittingly and Willingly, and with the greatest and most sedate Deliberation. Now as I have before shewed, Self is such a First Principle and Fundamental Interest in Nature, that as Nature generally, so all particular Natures, do intend and endeavor to the utmost the preservation therof; nor can it by any Natural Power of Compulsion, or Perswasion, be removed from this most Innate Principle and Instinct, (except only for preservation of the Universal Nature, which is also Natural in order to the necessary preservation of its own Particular Nature, as a Fox will bite off his Leg to preserv his Life)

for

for if any thing could be ousted of this most Natural Principle, then it should be ousted of itself: whereas Self is the Foundation of all other Concernments. Thus a Lion, Mastiff, Bear, Boar, Horse, or any other most stout and courageous Brute, will ly whining and pining to the last, rather then destroy itself, or suffer itself to be destroyed by others, untill Death necessarily dissolv it; because it is Conscious to itself, and hath this Common Notion in itself, that the Individuality therof, which truly and really is the very Self therof, shall perish for ever: whereas Man, having this Common Notion of the Immortality of his Soul Imprinted in his Soul (which principaly is himself, as Hebraicaly the Human Person is called a Soul, and as it is said *Animus cujusq; est quisq;*) though generally, according to his whole Human *Compositum*, he affecteth Life and dreadeth Death, yet judging it better for him to be in the Separate State of his Soul, then in the Conjunct State of his *Compositum*, he can and doth accordingly both determinand execute his own Death and Dissolution: though I do not conceiv that every Self-murderer (like *Cato*, who before-hand read over *Plato's* Discours of the Immortality of the Soul) doth so consider it Explicitely; nor as *Spira*, who in Despair would dy, that he might know the worst after Death; but rather most of them, not regarding any better or worst State after Death, however are willing to dy, to eas themselves of their present Miserable Life, and so desperately venture upon a future, whatsoever it may be: or perhaps, according to the vast and most Licentious Liberty of Human Understanding and Will, may thus Explicitely not only deny, but act contrarily to any Common Notions or Instincts whatsoever, and so destroy themselves: which yet they could never effect without such an Implicit Notion of the Immortality of the Soul Radicated in itself. And so none but an Immortal Being can wish a Notbeing, which yet is only an Imaginary and Illusory Wish; as we commonly Imagine Vacuity to be Something, we know not what; and so we may wish Notbeing, as Something which we conceiv to be a Vacation from Ill-being, we know not how: for certainly we can Naturally desire nothing but only in order to Self, which must always presuppose Self, by which, and for which, we so desire it: But however we may conceiv heerof in respect to present Ill-being, certainly none can affirm, that any Brute hath any fore-knowledg or



expectation of any better Being hereafter, or of any Transmigration, or Translation, or that it can thereby be perswaded out of its present Being, whatsoever it is, nor can he deny that there is such a foreknowledg and expectation in Man, or that he may Naturally and Really desire, and very truly say, *Cupio dissolvi*; as I believ not only many Christians, but also some Philosophers have thus welcomed Death; not through any Necessity, or in a higher Strain of Gallantry; but with a clear and conscious expectation of another Life after Death, and breathing after it, in and with the willing expiration of their present Life; which, whether it be also joined with any assurance of a better State therein, or not, yet plainly proveth that the Soul of Man generally is Immortal, becaus it can so affect another Separate State, which no Brute can so affect, becaus it is Mortal; and that it shall be either in a worst State of Eternal Misery, becaus some Men can so Imaginarily wish to prevent it; or in a better State of Eternal Happines, becaus others can so Really wish to enjoy it. And though I believ this Opinion of the Immortality of the Soul (as also the other, that there is a God) to be Explicitely Exerted and Exercised by few, yet certainly they are both Implicitely Radicated in the Minds of all men, which Renders their Lives and Conversations such, as if sometimes, and in some respects, they did seem so to believ, and at other times, and in other respects as if they did not; and it may appear so to be in themselves, and to themselves, in that they have such a continual strife and endeavor to cast and keep these Opinions out of their Minds, which is commonly done either by not regarding, or resolving against them, wherof the very fear or doubtfull apprehension, which no Brute can have, doth approve to the Soul itself what it may expect; and which, if men begin at any time to think thereof, will return upon them; though some more learned, study to confute themselves by Contrary Opinions, and that they may make way for the denial of the Immortality of the Soul, therefore also deny all Separate Spirits both of Men, and Angels Good, and Bad; as the *Sadduces*, and others, with *Epicurus*, deny all Inferior Spirits whatsoever; huddling all things and themselves together in the common Matter; which is such a Physical Libertinism, as though it may gratifie us at present, yet is indeed no less then the Eternal Self-murder of the Soul. And so likewise others, though they will not reduce all Spiritual Substances to the gross Matter, yet affirm their Soul to be only *Part Anima Mundi*, as they term it; into which, when it dieth,

dieth, it returns again, as into another Spiritual *Chaos*: and so though the Substance remain therein, Confounded and Coagulated with others, yet the Personality and Individuality thereof is thereby Corrupted and destroyed, like the Sensitive Spirits of Brutes; which is only another more subtle Denial of the Immortality thereof; that is, of the very Individuality and Personality of every Human Spirit, as I have shewed. Wherefore because they cannot deny the Immortality of the Soul Absolutely, they thus deny the same Personal future Condition thereof; and any such Intensive, or Extensive Rewards, or Punishments, in Heaven, or Hell; which to mitigate and moderate, they have invented and appointed a Transmigration for all Souls into better or worse Bodys after Death, accordingly as they have behaved themselves while they Lived in the former: Whereas they must also affirm, that they are still Human Spirits, which are so detrudd into Brutes, or Vegetative Bodys; as the Poets plainly do acknowledg, and so the Man in the Buck would have said to his Hounds and Huntsmen, *Athen ego Sum* — as the Tree did to *Aeneas*, *Nam Polydorus ego* — which yet certainly is contrary to all Philosophy and Nature: for every Specificall Spirit must have its own proper Organical Body; and if any of the more Noble and Necessary Parts of its own Body, while it Lives in it, be Discontinued, Dislocated, or Disordered, it will Live no longer in it; much less could the Human Spirit of *Athen* Live in a Buck, or of *Polydorus* in a Tree; for Bodys are not only Vehicles of the Spirits, but Domicils, and Officines, as I have shewed; and as Sensitive Spirits cannot Live in any other besides their own Element, so much less can they, or the Inrellective Spirit of Man, live in any other then their own proper Bodys, which are therefore so Effigiated and Formed for them by their proper Vegetative Spirits, as I have also shewed. Or if they could be Transpeciated into other Sensitive or Vegetative Spirits, then their Substances being so Specifically changed, their Faculties, and Qualities, and all their *Idea*, and Notions subsisting therein, must also be changed, and altered; whereby they should no longer remember, who they were, nor what they did formerly; and so they should suffer for they know not what, after such an Act of Oblivion, not only of him that so forgiveth and forgetteth the Crime, but also in him who forgetteth the Fact. And though others say, we be all born with some *Reminiscentia*, as they term them, yet certainly they are no such Acquired Notions of any Matter of Fact, or thing Good or Evil, that we formerly did or learned,



learned, but only such Common Innate Notions which God and Nature have Imprinted in us, and so taught us to know them, which are only Natural, and not Sinful: and there are also certain Special Innate Notions of Specificall Spirits, which are only proper to that *Species*, and to none others, as I have shewed; all which should be lost by such Transmigration, or Transpeciation; which therefore is not, nor can there be, any such *Metempsychosis*, as Philosophers would have it; nor yet any such *Metamorphosis*, as the Poets more rightly term it: and as both of them are contrary to all Reason or Sense, so we have no other Authority but only *Ipse dixit* for such Assertions. And yet this Opinion being apprehended as a Middle way between the Mortality and Immortality of the Soul (though not according to the Excellent and Spiritual Nature of an Intelligence) and also between no Reward or Punishment hereafter, and the true Heaven and Hell, and all the Glorious Transactions thereof (though not worthy the Majesty and Perfection of the Divine Creator) hath very much prevailed antiently among the more Learned Heathen, and generally with the Common People; and is still retained by the *Banians*, and some others. But the most difficult Point that I know among Christians, concerning the Immortality of the Soul, is that, which is called by some, the Sleep thereof, and by others more rightly *Psychopannychia*, or the Perinostation of the Soul, between Death and the Resurrection; for in Sleep there is some Operation both of the Sensitive and Intellectual Spirit of Man, though Wild and Irregular, as I have shewed; and it is not intended that in this State there is any Operation whatsoever, but a total Vacation, and Cessation thereof, like Rest of the Body, or Bestial part of Man, which is said to Sleep in the Grave, and that is therefore called a *Cœmeterium*, or Dormitory. But certainly the Soul, when it departeth from the Body, carrieth along with it all its own Innate and acquired Notions (though as the Man himself, so all his Thoughts perish as to this world) and I doubt not but that also it hath others, and far higher, and better in that State; and Blessed Souls are said to be in *Paradise*, which imports Pleasure and Delight, and that cannot be without Contemplation and Enjoyment: also they are now called *Spirits of Just Men made Perfect*, which cannot be without Perfect Operation; and since they are Separate from the Body, and all Instrumentality thereof, we must consider how and in what manner they may probably

bably Operate. And heer I must explicate what I intend by terming the Intellectual Spirit of Man an Intelligence, and affirming that and Angels to be in the same Intellectual *Classis*, whereby I conceiv, that as Fishes, Fowls, and Beasts, are all in the same Sensitive *Classis*, and yet very farr Different one from another, not only in their whole *Composita*, but also in their very Sensitive Spirits, which Specifically Differ; and the Piscine Spirits are much Inferior to the Bestial; so also are Angelical and Human Spirits in the same Intellectual *Classis*, (and not only Spirits Generically as they are distinguished from Matter, and as all Elementary, Vegetative, and Sensitive, are Spirits as well as Angels, as I have shewed) but Classically Coordinate one with another: and though the Spirits of Men be Inferior to Angelical, as it is said, *Thou hast made him little lower then the Angels*, yet certainly they are not Subordinate unto them, as Fishes, though Inferior to Beasts, are not Subordinate unto them (so as all the Sensitive *Classis* is unto Man, and the Vegetative to the Sensitive, and the Elementary to the Vegetative, and Matter to the Elementary;) because they are not of an Inferior *Classis*, but of the same *Classis*, wherein all are Coordinat, as I have shewed: and so are the Intellectual Spirits of Men with Angels; and as our Savior saith, in this Future State they shall be *Isangeli*, not only like, but equal to them; and indeed if we should not be in the same Intellectual *Classis* with them, Man should not be a Microcosm as he is, and Christ in our Human Nature should not have Assumed all the several *Classes* of Nature, as he did: And because we are so Coordinate with them, therefore we need not their Mediation and Intercession, but only his, who is the Mediator God-Man: And as the highest Excellence of their Nature is to Know, Love, and Enjoy God, so we are capable heerof as well as they: and as we and they are Moral Creatures, so we are Mutually obliged one to another, but neither of us to Brutes; and so the Angel said to John, *I am thy fellow-servant*, and we are yet more united in Christ, who shall also make us partakers of their Supper, and in whom all things are Recapitulated, as the Apostle saith, *both which are in Heaven, and which are in Earth, even in him*: Whereby, as it is also said, we Come unto Mount Sion, and unto the City of the Living God, the Heavenly Jerusalem; and to an Innumerable company of Angels; to the General Assembly, and Church of the First-born, which are written in Heaven.



Heaven. Now whereas I have shewed, that in this present Con-  
 junct State we cannot Operate without or beyond the Body ;  
 that is , we cannot Understand without Phantasms, which we Irra-  
 diate with the Spiritual Light of our Understanding , nor Locally  
 Move the Body without the Motive Spirits, which we Move by  
 the Spiritual Power of our Will, whereby we Command and Go-  
 vern the Sensitive Imagination and Appetite Immediately, and so  
 the whole Body Mediatly ; and that Angels need no such Instru-  
 mentalitys, but may Intuitively Contemplate all things by the  
 Irradiation of their own Mental Light, and Move them by the  
 Eradiation of their own Spiritual Heat, as I may so term them ;  
 thus our Human Spirit, as well as they, shall also then have the  
 same Intuitive and Motive Qualitys Actuated therin, which are  
 now in it Potentialy ; for so Intelligences, as well as all other  
 Natures, have their proper Potentialitys and Actualitys, other-  
 wise they should not be Mutable, ( for Alteration is by production  
 of Potentiality into Actuality, and reduction of Actuality into  
 Potentiality, as I have said ) and though they are not Generable  
 or Corruptible in their Substances, which are Simple, and with-  
 out any Mixture, or Composition ; and such as always Subsist in  
 themselves, and are neither Generable, nor Corruptible, as I have  
 also shewed ; yet they have their Accidental Qualitys, by which  
 they Operate, and not by their Essences or Substances Immedi-  
 ately, more then other Natures ; and all such Accidents do Subsist  
 in their Substances, and thereby, and therin, have their Actu-  
 alitys and Potentialitys, and are therefore Generable and Cor-  
 ruptible in themselves, and so Mutable. Also all Simple Sub-  
 stances of the same *Species* have all the same Specificall Qualitys  
 therof, either Actualy, or Potentialy ; becaus they are of the  
 same *Species*, as they are such Simple Substances, though their *Mista*,  
 or *Composita*, may otherwise Differ Specifically as such ; for so  
 though the Cortical Stones, Metalls, Minerals, and Subcortical Mag-  
 net differ Specifically, as *Mista*, yet as all of them are of the  
 same Predominant Element, Earth, so that being a Simple Sub-  
 stance in it self, hath all the Terrene Qualitys in it self, Actualy, or  
 Potentialy ; and thus the Magnetical Virtue, which is a Terrene  
 Quality, is Actuated in Iron ; and so, as is said, may be in Brick-  
 earth, and the like : And so though Æthereal and Culinary Fire  
 may differ Specifically, as *Mista*, yet the Elementary Fire which is  
 Predo-

Predominant in both is Specifically one and the same Simple Substance, and hath all the *Æthereal* Qualities in it self, either Actually, or Potentially, and so Planetary Virtue might be Actuated in Culinary Fire, as well as in Comers; and so also all Simple Substances of the same *Classis* have the same Classica or Generical Qualities, as every Grass, Herb, and Tree, hath Vegetation, and the like, though in their own several SpecificaI maners; and every Fish, Fowl, Beast, hath Sensation, and the like, though in their own several SpecificaI maners: And thus the Human Spirit, and the Angelical Spirit, being both Intelligences, which may Live and Operate separately, have also such Generical Qualities, both Intuitive, and Motive, whereby they may so Live, and Operate Separately, in themselves, though in their own several SpecificaI maner, either Actually, as the Angels, or Potentially, as we also now have them: And as an Embryon in the Womb hath many Facultys Potentially, which yet are not Actuated untill it be born and brought forth into the Light, so have also our Souls, while they are as Embryons in the Egg, as it were, of our Bodys; and as we have now many Actual Qualities which shall in that Separate State be reduced to Eternal Potentiality, as Nutrition, Tasting, and the like; so shall we then have others Actuated in us, which we never had Actually before. And certainly, in the Palingenesis of the Body, there shall be such a great and wonderfull change of Qualities, that the Apostle calleth it a *Spiritual Body*, as I have shewed; which shall not be only a Platonical Vehicle of the Soul, but Organical, and most Glorious; as the Apostle saith, *The Lord Jesus Christ shall change our Vile Body, that it may be fashioned like unto his Glorious Body; according to the working whereby he is able even to subdue all things to himself*: Whereby also we may understand that Separate Spirits are not so vastly Diffusive or Atomically Retraactive as some fanfy, but have their Bounds, as other Finite Natures; for so certainly our Separate Soul, after the Resurrection, shall be confined within the Body, as well as in this Conjunct State. And that the Separate State of the Soul is such, may somewhat Sensibly appear in our selves, who seem to have some Common Notion thereof Imprinted in our very Souls; which made the Heathen Philosophers so much complain of the Prison of their Body, and Bondage of this Conjunct State, as expecting a better afterward. And Christian Divines have a Problem, Whether if



*Adam* had stood, he should not have been at length Translated to a better, that is, this other State? and if we seriously consider it, there must probably have been some such ground of that wonderfull, and otherwise inconceivable Tentation of *Adam* in Paradise; which was not to any thing he then had, nor to any thing which he was not capable to have, especially if it were Absolutely Impossible, as to be a God, or so to be like to God; for though now the Corrupt Mind of Man may, as I have said, apprehend, or affect Nonentity, as Entitative and Impossibility as Possible; yet we may not suppose any such thing of him in that State of Perfect Understanding and Will; but it was a most obvious and prevalent Tentation, that he having this Common Notion (which we have now only Implicitely and Confusedly) in his Perfect Mind most Explicitely and Distinctly, and thereby knowing that he had such Angelical Facultys Potentialy in himself, might come to have them Actuated, that so he might be like the Gods knowing Good and Evil. And though this be a farther and higher Perfection of the Human Spirit, yet *Adam* was not therefore made Imperfect, but Good and Perfect according to that Conjunct State, wherein he was Created; which was his Original Perfection, and whereby he was so made a most Perfect Microcosm, or Epitome of the present World; as he shall be also in his future State of the other World; when not only these Angelical Perfections shall be Actuated in his Soul, but his very Body shall be more Spiritualised, as the Apostle termeth it, or made fit for that more Spiritual State of an Immortal Life: which yet shall still be a Body, having all Corporeal Property and Affections; such as the Body of our Savior was after his Resurrection; which though not Sensible, as before, to present Sense; for so he was not Visible, or Tangible, otherwise then as he so pleased to appear sometimes unto some; yet hereafter, when our Sensitive Bodys shall be also refined and sublimated, and made like unto his Glorious Body, every Eye shall see him; as Job saith, *I shall see for my self, and my Eyes shall behold him*, that is, *Jesus Christ* his Redeemer, who shall Eternally be the Visible Deity, and Image of the Invisible God. Nor could *Christ*s Spiritual Body penetrate any other Body, as some have supposed from that Text, wherein it is said, that he entered when the Doors were shut (or the Doors being shut) which yet it doth neither express nor import, but only that he did

did not enter into the house, so as our gross Bodys now do, by Doors open, which is their usual *Avenue*; whereas his more Spiritual Body might enter in by a Window, or other Aperture of the house, without any Penetration. And this Renovation both of Soul and Body shall be generally Conformable unto his, and so made by his Divine Power, as it is said, *The first Man Adam was made a Living Soul, the last Adam is made a Quickning Spirit: And as we have born the Image of the Earthly, we shall also bear the Image of the Heavenly.*

VII. Thus the Heavens and Earth were finished, and all the Host of them; which Consummation plainly refers to the first Inception, In the *Beginning God Created the Heaven and the Earth*, or, as it is Originally, these Heavens and this Earth, which were the same that were afterward so finished in the several Works of the Six Days; and which, as it is also said, *God Created to make*; and particularly it is so expressed, not only of Elements, but also of Vegetatives. *These are the Generations of the Heavens and the Earth, in the day that the Lord made the Earth and the Heavens, and every Herb of the Field, before it grew*, as I have formerly observed; and now observe again, how this Doctrine of Creation of all Generable and Corruptible things first in the *Chaos* of their Potentiality, and of their several Generations afterward in the Six Days, is so plainly and cumulatively expressed and repeated, that none may doubt of the Truth thereof. Again as not only Heavens and Earth here are mentioned, but also an Host thereof or orderly *Militia* (and thus God is called the Lord of Hosts or of the Armys of all the Creatures) so, as I have observed, there is both a Scale of Nature, and also an Oeconomy of the *Composita*, and Polity of the whole Universe, and that therefore it is declared of them all, that they were *Valde bona*, (or as it is Originally *Valde-bonum*, Singularly, as of One) and an *Epitome* thereof is every Man in himself, as I have shewed; and because, as I have said, he is such a Microcosm, now in respect of this World, and so shall be of the World future, therefore God doth still continue to Create the Souls of men, from the end of the first Created World, (which was thus consummated in Man, as the Summ of all the rest) untill the beginning of the other World. And if we rightly estimate the many Millions of men living to-



gether on the Earth, probably he doth Create Human Souls every Minute, and so though he rested from making the great World, yet he maketh many such little Worlds continually: for though it is said, *He had rested from all his Works which God had Created to make*, that is, to be Generated or to make by Generation, first Originally, which was Supernatural, and their Improper Creation, and since Successively, by Natural Generation, as I have shewed; yet he rested not from Proper Creation of Human Spirits in their several Individualitys, according to the same Specificke kind, which he had Originally Instituted and expressed in the Protoplast, or first Man, and so to be Compolited with Human Bodys, according to that very Institution and first Law of Human Generation, as I have also shewed. Nor doth he so Immediately Generate or Improperly Create the Human *Compositum* of any other Man, as he did the first *Adam*, except only *Jesus Christ*; who was thereby declared to be the *Theanthropus*, as it is said, *The Lord himself will give you a Signe, Behold a Virgin shall conceive and bear a Son, and call his Name Immanuel, which being interpreted is, God with us.* And when God had thus Originally made Man (that is both man and woman, as it is said, *Male and Female Created he them*) and probably woman of whom *Christ* was to be born, and so is called the *Seed of the woman* being made after man, was also the last of all these Works of God: then he pronounced of them all Universally, that they were very Good, not only in respect of the Univers, but also of Man, as the *Compendium* of all, and Consummation of his whole Work of Creation, in order to his ensuing Work of Redemption. Whereupon he Instituted and made for Man his first Sabbath of Rest; *And on the Seaventh Day God ended his Work which he had made*, that is, as he began in the very first Instant, so he continued to work untill and in the very last Instant of the Six Days; and therefore; he rested not before, but proceeding continually to work in all the Six Days (as it is said at first, that *the Spirit of God Moved on the face of the Deep*) he ended, or Hebraically, had ended, on the very first Instant of the Seaventh Day, or Sabbath of Rest; whereas it could not be rightly said, that he ended, or had ended, before; for in the very last Instant of the Six Days he still continued to work: so exact and proper is Divine Language; and though men cannot discern between Instants of Time, or Points of Extension

tension (which therefore are so Indiscernible, that the Fluxes and Augments of Created Nature may appear Intire and Continuous to us) yet known unto God are all his Works, even Instants and Points as well as Numbers; and accordingly he doth declare them in his Word, as exactly and properly as Human Understanding can apprehend. Again though it be said, that *He rested on the Seaventh Day from all his Work, which he had made*; yet it is not said, that he rested in it, but this Work of Creation was Corrupted very soon after it was finished: Wherefore as there remaineth a Rest to the People of God by the Redemption of the World through *Jesus Christ*, so that is called also the Rest of God himself, and shall be the Everlasting Sabbath, and Consummation of all his Works, both of Creation, and Redemption, wherein he will rest for ever.

Thus I have delineated the true System of the World, which God himself, who made it, hath declared and reveled unto us in this Divine History of the Creation of the Heavens and the Earth; that is, the Superæther, and utmost Circumference therof; and within that Concave Sphere, the Æther, and within that, the Air, and within them all, the Orb of the Terraqueous Globe, and inmost Center therof: which certainly is the most Symmetrical and Uniform Chorography of the whole Body of Matter, and of these several Members therof; most exactly according to the greater or less Density of their Matter, and more or less Activity of their Spirits. And therein I have also described the Scale of Nature, and all the *Classes* therof Subordinate and Subservient one unto another; that is, Matter to Elementary Spirits, and Elements to Vegetatives, and Vegetatives to Sensitives, and Sensitives to Intellectual Man, and Man to *Jesus Christ*, the Head of all things: and other foundation can no man lay then that which is laid by God himself. *Moenendus est misellus Philosophus ut desinat esse Conditor Mundi*: and I confidently suppose, that if *Plato* and *Aristotle* had enjoied the benefit of this Divine Light, they had farr more improved Philosophy by building upon this Foundation; then Christian Philosophers have done by building upon theirs: and that we may enjoy the benefit of their great Learning, and yet disengage our selves wholly from their Errors, we must reduce all their Opinions, and Human Inventions to this most Infallible Rule; which, if we rightly consider it, will not only rectifie their Errors, but also instead therof present such Divine Truths, as they did never conceive or apprehend.



hend: as may particularly appear by a short Recapitulation of what we have formerly discoursed. Thus first we have proved a Beginning, and consequently a Creation of the World; which no Heathen Philosophy so understood, as it is declared by God in his Word; but either imagined an Eternal Creation without a Beginning in any certain Time, removing it perpetually backward by supposition of many Deluges, Conflagrations, and general Devastations, and Indefinite Revolutions: or though they may sometimes seem to acknowledg an Improper Creation from some precedent Principles of Matter, Atoms, *Mens*, *Anima Mundi*, *Idea*, and the like; yet they do not express any Proper Creation from Absolute Nonentity, to which Heathen Philosophy never did subscribe; nor do I know any Word in any other Human Language, but only Hebraical, which doth import such a Proper Creation. Though if any conceive otherwise, and can collect any such Acknowledgment from their doubtful, and confused, and sometimes contrary Sentences, I shall not hinder him from subjoining their Human Testimony to Divine Authority. But certainly *Moses* doth most plainly and clearly affirm a Creation of the World, in a certain Beginning, and so proceeds to declare the first Age of the World as particularly and expressly, as if himself had been Contemporary, and lived in the same Time and Places; and the Affairs therof, (which all Heathen Historiographers esteemed Fabulous, and termed *Ogygia*) more exactly and truly then they do relate the Transactions of later Ages. And thus whereas other Nations dated their Writings so many years *ab Urbe Condita*, or in such an Olympiad, or the like; the Jews, both antient and modern, date them, *ab Orbe condito*. Nor is the whole Age of the World so very large or vast, but that every man may according to Divine Chronology easily comprehend it: And indeed there are not probably above 150 Generations between us and *Adam*, who was the Common Ancestor of all Mankind: for the Scripture doth exactly enumerate them all from the first *Adam* to the Second; that is to *Jesus Christ*, 76 Generations Inclusively, (as *Enoch* is so reckoned from *Adam*, and the Brazen Lavacre so to be measured, as I have shewed) for so *Luke* declares his *Seculum*, as *Matthew* doth his proper Linage: and if we allow fower Generations to every Century, since the Nativity of our Savior, yet the Total will not exceed that Number. Nor is the whole World and System therof so Indefinite but that

that the Mind of Man may comprehend it, and by the Light of the Divine Word look through it as a transparent Globe: for so it is said, *He hath set the World in their Heart*; and his Word plainly sheweth us how all Generable and Corruptible things were first educed out of a *Chaos* of Potentialitys, wherein all their Primitive and Simple Essences were then latent; and brought forth most orderly and successively in Six Days, by God who Created them before by a Proper Creation from Absolute Nothing, in a Supernatural maner by Improper Creation; which was their Original Generation then Instituted by God himself, and by his Divine Benediction so continuing Successively: And this is a short, plain, and evident account therof; whereas others, instead of such Proper and Improper Creation, have imagined a *Potentia Materia*, or Power in the Matter of producing out of itself other Active Substances far more excellent then itself; which yet were not before Realy in it; or that the Matter is transpeciated and converted into them: though an Angel, who is the chief Being in the Scale of Nature, cannot so produce out of himself any other then his own proper Qualitys and Accidents, nor can he Realy transmute himself, or be converted into any other Inferior Nature whatsoever; and much less can Matter, which is the lowest and basest of all others, convert itself, or be converted into any Superior Nature. Certainly that which they so affirm to be in *Potentia*, must be either *Ens*, or *Non-ens*, while it is so in *Potentia*; and if it be *Nonens*, then *Non est in Potentia* (as I have shewed of Vacuity) and if it be *Ens*, then as I have said it is also an Entity Created by God in its Potentiality, or *Chaos*, and so produced by Natural Generation into Actuality; as if Vacuity could be any *Ens*, then it must also be Created by God, or Concreated with the World, and should not be before, nor beyond, nor any where out of the Created World, and Body of the Matter therof, as others have vainly supposed of such an Imaginary Space, Nor is their *Forma Misti*, or *Compositi*, any other thing then the Result of the very Mistion and Composition of those Primitive and Simple Entities, according to their own Natural Coordinations and Subordinations in the Scale of Nature, which God hath so erected and ordered, that they have in themselves all the Natural Principles therof, and an Aptitude and Appetite to be so Mist and Composited in all Successive Generation, according to that Law of Original Generation: and therefore Forms are no such things.



things as are formed or ordered by I know not what *Cholebodea* or come I know not whence, *aliunde & extrinsecum*, into the prepared Bodys; but, as I have shewed, there are also other Substances, or Substantial Activitiys, besides the Body of Matter, Created by God, in and with the Matter, that do Consubstantiate, Inform, or Inspiritt it; and fabricate, and fit it for themselves; and also mingle and compose themselves in and with it into one *Mistum*, or *Compositum*, according to the Order and Oeconomy of Nature, by their own Internal Principles and Powers, which God hath also Created in them. Which Substantial Activitiys, or Active Substances, I therefore call Spirits (as the Scripture also doth so call not only Substantial, put also Accidental Activitiys; as the Spirit of Wisdom, Jealousie, Meekness, and the like) and they may well admit it, who say, *Omnia Animarum sunt plena*, and particularly that there is a Vegetative Soul; which yet, as the Scripture doth not-so express, I can not admitt; for Soul is more special and proper to Living *Animals*, but Spirit, though Eminently it signifies the chief of Spirits that is the Intellective, and so Soul and Spirit are sometimes distinguished, yet more generally it signifies any Substantial or Accidental Activity whatsoever, and is so commonly used by Chymists, Physicians, and others, as I also use it in a more Spiritual sens. And though I dispute not about Terms, yet certainly such a Proper and Improper Creation of the Primitive and Simple Entitiys, both of Matter, which is a Passive and Receptive Substance, and of the Accidents and Affections therof, and of all those other Substantial Activitiys or Active Substances, which I call Spirits, and of all their Accidents and Affections, Created in the first general *Chaos*, and the Original Generation or Production of them, by Mitions, Compositions, Actuations, and Perfections, in the Six several Days; and accordingly all Successive Generation, by Production out of any particular *Chaos* of the same Entitiys or Essences, which are so Generated or Produced, are such Real Veritiys, that I am perswaded no Philosopher whatsoever can Really satisfie himself, or others, concerning the first Principles and *Origines* of all things, and all the Alterations by Generation and Corruption, by any such supposed *Potentia Materia*, Eminences, and Equivocal Causations, Transpeciations, and Conversions, or the like; which are only Terms and Notions, and no Realitys in Nature: nor can ever confute or disprove this Divine History of Creation, either in the general

neral System therof, or in any of the particulars, which *Moses* proceedeth afterward to declare; And thus wheras the Ancients generally conceived the *Æther* and *Æthereal* Bodys to be Super-elementary, and Sacred, he sheweth us plainly, how *Æther* is one of the Fower Elements, and so was first prepared in the first Day, wherein Light, (which is a principal Quality therof) is said to be so produced; for the Substantial Spirit of Fire, or *Æther*, was Created before, whereby it is denominated one of the Heavens, and afterward termed *Expansum*, as well as the Air: nor doth he affirm it to be solid or firm, but such a Flaid *Expansum* as Air also is; and plainly implieth that it was moved with the Light in it about the Inferior Orb, whereby God made Day and Night, before the Earth, or Water, or Air were so made or fitted, or that there was any Motion therof, or therein. And the Air, which is Naturally an *Expansum*, cannot be Naturally a *Compressum*, whereby in its own Element, or Atmosphere, it should Naturally seek to expand itself more, and thereby Elastically press, as some would have it: Also both *Æther* and Air are called Heavens, as one is the Fountain and Immediate *Medium* of *Æthereal* Light, and the other the Vehicle, and Immediate *Medium* of Sight; and so I suppose, that Air doth Refract, or Reflect, very little, nor are either Objects in the Air, nor Starrs in the *Æther*, thereby seen Intersected and Inverted, as through a Convex *Lens* in the Air, nor so much magnified and distended, as Divers see Objects in the *Fundus* of Water. Again in this Second Days Work, *Moses* declareth Vapors in the Air to be only Waters above; and thereby intimateth the Special Instrumentality therof in Nature; for so indeed Vapor is almost as Chymical an Instrument, as Fire. Nor yet doth he affirm these Waters to be above all the three Heavens, or any of them, as some suppose; but only in, or upon, or all over, that Heaven wherof he treateth in this Second Days Work; or more Critically, as it is Originally, from above; and certainly we cannot suppose any Water to descend from above, but only that which first ascended from beneath. Nor is this ascent of Vapors the necessary and only caus of Winds, wherof we have no mention in the Creation; and if any Wind then were, it was probably some very tender and gentle breath, but greater Winds and Storms, which are effects of the Curl, are also caused by grosser Vapors; which whether moist, or dry, are not Formally the very Wind; for



that, as such, is only *Aer motus*; but may be the Efficient Causes thereof, as any other Impuls, or Ventilation, of Blasts or Ventiducts: and generally moist Vapors Cause more Rain, and dry more Wind, as appears by *Herricans* in more hot Countreys. And in the Third Days Works, he shews, how wonderfully God formed and prepared the *Oecumene*, or Habitable Globe, by causing the Waters to Subside, in all the Chanells of Seas and Rivers, which he cut out for them; and by raising the mighty Mountains, which may be therefore rightly termed, the Mountains of God, and by *Jacob* are called the Everlasting Hills, wherof others give us no account. Nor doth he affirm Vegetatives to Live; but, as I have observed, plainly distinguisheth between Vegetative and Sensitive Spirits, which he afterward calleth Living Souls. And in the description of the Works of the Fourth Day, we find none of those Monsters and Figments, which both Poetry and Philosophy have introduced in the Starry Heaven: for neither doth he divide it into Spheres, having plainly shewed before how the whole *Æther* was only one Sphere, as well as the other Heavens; nor indeed can such several Imaginary Spheres solve the *Phænomena* of the Motions of *Æthereal* Comets, and of all the Planetary Motions; as of the *Satellites*, which, as I have observed, move not in perfect Circles in the *Æther*, but only about their principal Planet, whereby their Motion in the *Æther* describes an Hemitrochoid, as I said; as if a Quernstone were set upright, like a Cartwheel, on a decliv Hill, and a man with his hand on the Handle should thereby move it round about the *Axis* down the Hill. Nor doth he assigne any Intelligences, or *Dæmons*; and a *Metatron*, or President over them all, to move the several Spheres. Certainly the Scripture calleth evil *Dæmons*, Princes of the Air, and not of the *Æther*, though they were Original of the same Nature, and Office with good Angels; but as they were since ejected out of the Super $\alpha$ ether, so now probably they are confined within the Sub $\alpha$ etherial Orb, between which there is such a great Chasm. Nor doth he distinguish the Luminaries into Planetary and Fixed, but calleth them by one common Appellation, Lights, Originaly derived both in Name and Nature from the Primigenious Light, wherof they were all composed. And he particularly nameth only the two principal Luminaries, which so give Light upon the Earth, and according to which, besides the common and Diurnal Motion of the *Æther*, all the Sacred Feasts.

Feasts of the Jews were instituted. And as the Sun is first named, so probably he was first made of that Primigenious Light, whereby he Illustrateth all the rest: and therefore is sometimes called by the same Name, or the Light. And as he hath Light, so also Heat, which is another Æthereal Quality, in himself Formaly, and not only Eminently or Equivocally, as some would suppose; and as indeed I conceive that the Moon causeth Moisture, which is no Æthereal Quality, over which she doth yet manifestly Predominate; as may appear most notably in Tides, whether she then causeth more gross Vapors, when she is in her *Apogæa*, because she is farthest from the Earth; or generally more Vapors, because she is then more strong and Præpoent, as the Sun in his *Apogæum*; or from some unknown Influence or Power. But however those Vapors which she causeth do not make that whole Body of Water which floweth and refloweth in Tides; nor doth every part of that whole Body of Water pass to the extremitys of the Floud and Ebb; but only the Rivers in their Fall above the Floud of the Sea are supplied by the Vapors, which causeth the Impuls of the whole Undulating Body of Water, as farr as the Ebb; like the two Handles of a Saw, in sawing forward and backward, not very farr, though the Saw be never so long: for plainly the Waters in the Floud toward the Rivers are not much more Salt, nor in the Ebb toward the Ocean much more Fresh, but in the middle, where they meet, and where a proportionable overplus of the River Water so caused by the Vapors doth mingle with the Seawater. Also he plainly intimateth, that as some of the Luminarys are manifestly Motive, so they are all, in that he doth not distinguish between them: and it is elswhere expressly said of the Starrs generally, that they militate in their Courses, or Originally, Paths: and if the Fixed Starrs do move Uniformly together (which is the last *Residuum* of the ancient Error and Opinion of their Fixation) yet however, according to their Various Positions in the Æther, they must move Differently in Time, in that very Uniformity in Position; and either in Position or Motion, or both, they are all Asymmetrous: certainly no known Motion of any of them is Commensurable with the Motion of the whole Æther, according to which we assigne the Proper Day Natural to be, as I have said, fower and twenty hours neither more nor less, otherwise they should not be for *Signes*, and for *Seasons*, and for *Days*, and for *Years*, and all the Variations thereof.



therof. And though many of them be farr greater then the Earth, yet they all move about it, becauf they were made to give Light upon it, which they could not do at fuch a diftance, unlefs they were fo gear. And their Number is Innumerable unto us, and perhaps not fewer then of the Hoft of *Israel* in the Wildernes; nor of that which *Jonah* gave up to the King *Rotunde* before he had completed it; or of that which he ftill proceeded to complete, untill he was hindred by the Plague. Nor doth *Moses* lay any foundation of Judicial Aftrology, which is exprefly condemned by Scripture. Again in the Works of the Fifth and Sixth Day he describeth the Original Generations of Fifhes, Fowls, and Beasts, and moft truly termeth them Living, and afterward calleth their Bloud the Bloud of Life, which our Learned Doctor hath lately difcovered to be a moft proper expreffion, and citeth that Text in confirmation of his Difcovery; whereas formerly the Heart was termed *Primum vivens, & ultimum moriens*: I have been informed by a Phyfician my Neighbor, that having difsected an old Toad fo farr as that he had taken out the Heart, and afterward stepping afide, before he returned again, the Toad had crept away into his Garden; where he found it alive, and that it fo lived fome confyderable time. In the laft of all the Works of Creation, that is, of the little World, Man, he discovereth a new World of Mysterys not only as Man is the whole Scale of Nature, and as there was another Proper Creation of his Intellective Spirit, but alfo how he was made in the Image of God, in order unto *Jesus Christ*, God-Man, who, by the Affumption of the Human Nature into the Divinity, did alfo fuperadd and unite to this Scale of Created Nature the Creating Nature, God himfelf; which is the *Anacephalefsis*, or Reduction of the Finite Creation to the Infinite Creator. And I fhall defire any Naturalift ferioufly to confyder this Natural Representation of the *Meffiah*, as he is thus the Infinite Completion and Consummation of Nature itfelf, and Perfection of the Univerf, and fo the Mediator both of Creation, and Redemption; that thereby God the Creator might gather together in one all things in *Christ*, both which are in Heaven, and which are in Earth, even in him; for fo indeed *Christ* hath united in himfelf not only the Intellective Spirit of Man, but alfo his Body, yea the very Matter therof; as it is faid, *In him dwelleth all the fulnes of the Godhead Bodily*. Wherefore all men fhould confes and acknowledg *Without controversy great is the*  
Mystery

*Mystery of Godlines, God was manifest in the Flesh.* And these are two most admirable and amazing Contemplations, which every man may have of himself, that he is a Microcosm or Module of the whole Created World, and a Nature which in *Jesus Christ* is also Immediately united to the Creator, and Divine Nature. And now I desire any to reflect on this whole History of the Creation of the World, which *Moses* hath described; and consider with himself from whom he could derive all this Philosophical and Theological Learning, (or as it was said, *Whence hath this man this Wisdom?*) but only from God the Author of all Entity and Verity: for though indeed he *was learned in all the Wisdom of the Egyptians*, yet probably that was only such Improvement of some Human Arts and Sciences, as they, and the *Chaldeans*, and *Gracians*, and other Heathens, have made thereof, and not that Knowledge of these Fundamental and more profound Veritys, which he delivereth. Certainly *Thales*, *Pythagoras*, *Plato*, and others, who purposely travelled into *Egypt* to be instructed in their Learning, brought back none such into *Greece*: and I suppose, that whatsoever the antient *Egyptian* Wisdom or Learning was, they received it first from *Joseph* and the *Hebrews*, as other Nations since from *Moses* and the *Jews*; though indeed they seem only to have received or retained some scattered Nations, Fragments, or *Cento's* thereof, mingling them with their own Fancies and Errors; which doth also plainly appear in all Pagan Theology. But as our Savior said, even untill his time; *Salvation is of the Jews*; so also was their Philosophy derived from this Fountain of Divine Truth, either by Scripture, or Tradition: for Language and Letters are the Vehicles of all that Human Science, which we therefore call Literature; and undoubtedly the *Hebrew* Language was the first and Original, and it is said expressly, that before the Confusion, *the whole Earth was of one Language*, which was Hebraical, as is proved by the *Hebrew* names of *Adam*, *Cheva*, *Sheth*, and the rest; and so also it is said, that unto *Eber* or *Heber* were born two Sons, the Name of the one *Peleg*, because in his days the Earth was divided, and his brothers Name was *Jocktan*: whereby it also appears that the *Hebrew* Language continued after the Confusion in the family of *Heber*, from whom it is so denominated; and as *Shem* is called the father of all the children of *Eber*, that is, of his Sacred Linage, so also



from him, the *Jews* who were of that Linage, were called *Hebrews*; as *Abraham* their Father is therefore called an *Hebrew*. Thus as *Noah*, and his Family only, were preserved from the common Deluge, so *Heber*, and his family only, were preserved from the common Confusion of Languages: and with the Original Language, the Original Knowledge which was delivered from their Ancestors, did continue in that Family; and probably the rest of Mankind, with the Language, lost also all those acquired Notions and Terms, or at least could make no common use thereof for want of a common Language; and so in Scripture we read of no great Actions performed by those mighty Builders in many years after: and they are said to have been thereby scattered over all the Earth; wherof such who were nearest to *Heber*, in *Chaldea*, and *Syria*, began to learn again both Language and Knowledge from him; as may appear by their very little different Dialects: Whence afterward the *Chaldeans* by their Conquests, and the *Syrians*, or *Phenicians*, (or *Syrophenicians*, as they are sometimes called) by their Navigations, conveyed Learning, both by Land, and Sea, to other more remote Nations. And that which doth most confirm me herein, is that in *America* (wherof the Inhabitants were farthest removed from the *Hebrews*) when it was first discovered, no such Literature was found, though otherwise they were Naturally as Ingenious as other men, and so might have invented Human Arts and Sciences themselves, as well as others, if they had not been so derived from this one Fountain. And as the Books of *Moses* are the most antient of any now extant, so I challenge all Mankind to convince this History of Creation of any falsity or Popularity otherwise then as I have declared, in any Sentence, or Syllable thereof, which he hath so truly and accurately expressed, that comparing it with all the Discoverys of Nature which have been since made by any others, I may term his Sentences, Antient Noveltyes, and all their Discoverys Novell Antiquityes: and I must acknowledge my self to have been as much instructed by a more Critical Inspection of Scripture, as by any Curious Inspection of Nature itself; though I esteem both very needfull, as they are mutual Explanations one of the other. Thus by the Card and Compass of the Divine Word I have adventured to sail round about the Philosophical World, and if any therefore shall call me a Scripturist,

rist, or *Ecclesiastes*, I should willingly accept it, if the Wifest of men had not assumed that Title, wherof I am not worthy to partake. However from this *Specula* of Truth, and by the Light therof, we may discern the Errors of any others, who have wandered from this right Way. As first the *Jews* themselves, after the Captivity, being mingled among the Heathen, learned their works, and the very Corruptions and Prevarications of that Divine Truth, which the *Gentiles*, as I have shewed, before borrowed from the *Hebrews*, in respect of whom all other Nations might be rightly termed Barbarous. And from this *Colluvies* flowed all their Sects of *Sadducees*, *Pharisees*, and others, and that Rabbinical Philosophy, which hath perverted the Simplicity of the Text by Cabbalistical and Allegorical Interpretations: and as they make all Scripture such, because some parts therof, as the Visions of Prophets are indeed Allegorical, so others would Interpret them also Literally as in the Vision of the New *Jerusalem*, because it is described Quadrate or Square Hieroglyphically to express the Immobility therof, some have fancied the Superæther not to be Spherical; though they might as well affirm it to be Metalline or Gemmeous, and of no larger extent then according to the Measure of so many Furlongs. But Philosophers have subverted the very foundation, and laid several others instead therof: and yet most Christians will build upon them, rather then acquiesce in the only true and Divine Philosophy: though I also acknowledg, that if others be reduced to this fundamental System of the World, very much Natural Knowledg may be gained from them, and that they may help to make a fair Superstructure. Nor have I laid down any *Theses* which I do not prove not only by Authority of Scripture, but also by Philosophical Reason, and Sensible Experiment; and if any dissent from me, I shall also desire him to oppugn me with all the same Weapons, and as solid and firm; for if they be feint and feeble, they will bend and recoil on him that useth them. As in that famous Controversy concerning the Motion of the Earth, if any should urge against me that Text, *which shaketh the Earth out of her place, and the Pillars therof tremble*, I should answer him, that if I wanted a Text to prove the contrary Truth, this alone might suffice: for both by it, and the Context, it plainly appears, that it is spoken of a violent Commotion of the Earth by God in his anger, and evidently



dently imports that otherwise the Earth Naturally resteth, and hath a Place of Rest. And so their chief Reason to prove the Earth Mobile becaus it is Magnetical (which I have granted) doth as plainly prove the Immobility therof, as I have shewed. And the Sensible Experiment of an Arrow shot upright in a Ship sailing, is a meer Fallacy; though the Motion of the Ship, and of the Archer in it, while he dischargeth it, may indeed caus some little Impuls that way, in the very discharge, which so directeth it. But certainly no man can believ that a Fly removing from an Horses head in travelling doth follow him with any less *Nisus* or labor, by reason of any such Conjunct Motion, then another Fly which freshly pursues the Hors; for let an Hors that hath been washed in a River run swiftly on the Land, certainly the Drops that fall from him will not follow him. There are many such fond Opinions and foolish Probations, which serv only to render Philosophy ridiculous. I am more confident of my *Theses*, and hope I have offered no such *Hypotheses*; but whatsoever they are, I submit them to the severall Masters in the respective Arts and Sciences; and generally all to learned Divines, whose complete Province it is also to inspect this Divine Philosophy, which God himself hath laid as the Foundation of Theology: and as he doth delight to intitle himself the Maker of Heaven and Earth, so *Jeremy* taught the Captive Jews that Chaldaike Sentence, *The Gods that have not made the Heavens and the Earth, even they shall perish from the Earth, and from under these Heavens*, to discriminate the only true God from all Idols: nor do I remember that any Heathenish Religion did ever ascribe the Creation of the World to any of them, nor indeed acknowledg any Proper Creation. Wherefore since Errors in Philosophy are so dangerous in Divinity, Theologists should assert the *Genesis* of Creation, as well as the *Exodus* of Redemption: as all the Sects of Græcian Philosophers did joyn Natural with Moral Philosophy. Certainly Theology only can teach us the right use and improvement of Natural Knowledg, that is, to Glorifie God, and benefit Mankind: and doth specially admonish us that we should not so highly prize Curious and Costly *Perierga*, or any vain Philosophy or Knowledg which only puffeth, and edifieth not: for indeed whosoever doth terminate in a Speculative Contemplation of the World, is as much a Worldling, as any Ambitious, Covetous, or Voluptuous men, who seek a satisfaction therein.

VIII. Let all men therefore praise and glorify their Creator, who hath made this whole World, and all things therein, in Order, Measure, and Weight; not only in all their own particular Natures, but in the Univers, and Polity therof, since every man is himself a Created Module, and *Idea* both of the Creation, and of God the Creator; who as a *Melior Natura*, was made to represent God to all Inferior Creatures in his Dominion over them, and them unto God in his Immediate Subordination unto him: Wherefore as all the Works of God do praise him with the *Echo* of his own Goodnes, and the whole Globe as a Cymbal doth sound forth his praises, so should we sing and chant them out with Oral Voice, and Mental Understanding, And thus as blessed Angels, who in Heaven behold the face of God, continually cry unto him, *Holy, Holy, Holy, is the Lord of Hosts*; so we beholding the Reflections therof in the *Speculum* of Created Nature, should subjoin in Consort, *the whole Earth is full of his Glory*. And more specially we should praise him for our own Human Nature, which is the Summ of all the rest, and Completion of both the Sensible, and Intelligible Worlds, quartering all the Familys of Nature in the Escutcheon of our Humanity: whereby we of all others are most obliged to this Divine Service, which is the very End of Creation, and Divine Goodnes therof. And every particular man should thus Personaly reflect on himself, becaus he is also an Abstract of Humanity; singing the Doxology of the Divine Psalmist. *I will praise thee, for I am fearfully and wonderfully made, and that my Soul knoweth right well; my Substance was not hid from thee, when I was made in secret, and curiously wrought in the lowest parts of the Earth: Thine Eys did see my Substance, yet being Imperfect, and in thy Book were all my Members written; which in continuance of time were fashioned, when as yet there was none of them*. Thus I was Created through the most free Grace of my Creator, and was not what I now am long since the World was made, and which might still have continued without me; who am a very Inconsiderable and Insignificant Portion of Mankind, among all the Innumerable Millions of men, who have been before me, are now with me, and shall be after me, and yet as much concerned in my Creator, and he as particularly regarding me, as if there were none other man in the World. And as I, before I was, so my Parents, or any others,



could not designe or desire any such being for me ; nor foretell or imagin what I should be ; but only my Divine Father, who did see down and prescribe in his Book of Eternity the *Idea* of my Personality, and whole *Compositum*, and accordingly formed me in my Mothers Womb, molding my Body, the Tabernacle of my Soul, by a Vegetative Plastical Virtue, and producing my Sensitive Spirit out of the common Clay, and lowest part of the Earth, inspired into it my Intellectual Spirit, as a Light Incensed that shall never be Extinguished, an Intelligence Ingenerable, and Incorruptible for ever. And now I am my self, and not another, nor ever shall be any other then my self, and so am put into the present possession of my own everlasting Being ; though my Soul living and dwelling in this Mortal Body, for this short space of a Temporary Life, hath this small Segment of its Eternity set out and appointed to be the sole opportunity of gaining my everlasting Welbeing : and the Intellectual and Spiritual Welbeing of my Soul is only the Union and Communion thereof with my Infinite Creator, which is the true *Apotheosis* of Intellectual Spirits. In which Original State of Divine Perfection Human Nature was first Created, but, by the Apostacy and Defection of our first Parents, did again sink down into the Mortality of the Body, and the self-confounded *Chaos* of the Soul. And now, O Mankind ! admire and adore for ever the Infinite and Incomprehensible Glory of God, and Mystery of his Spiritual Kingdom of Redemption farr exceeding all the Glory of his Natural Kingdom of Creation, which was only the foundation or Scene of the other, being so made in order therunto, and wisely consider, how God, Infinite in himself, look'd through this Finite World, as a Bubble of Diaphanous Air ; computing all Creatures therein, only as so many *Cyphars*, which though more or fewer, greater or less, before or after, in or among themselves, yet all signify the same Nothing in Divine Account ; neither adding to, nor diminishing from the Infinity of their Creator. And therefore from all Eternity, before the Foundations of the World were laid, he designed and decreed to Invest his own Son, the Uncreated, Essential, and Intrinsic Image of himself, with the Created, Artificial, and Extrinsic Image of our Humanity ; and therein with the Universal Nature of the Created World. By whom Finite is thus united to Infinity, and Mutable to Immutability, and in whom God Infinitely and Immutably enjoineth himself, in the full Embraces  
both

both of his Essence, and Operations. And this is that new and better Creation, which shall endure for ever: wherof it is also said, as of the first Creation. *In the Begining was the Word, and the Word was with God, and the Word was God. The same was in the Begining with God. All things were made by him, and without him nothing was made that was made.*

And now I praise thee, I bless thee, I adore thee, Lord, God, Creator of Heaven and Earth! for thine own Uncreated Glory, Eternally Immanent in thy self, and for the Transient manifestations therof in and to thy Creatures. And as I admire thine own Infinite Incomprehensibility, so also all those Finite Incomprehensibles in Nature, and all the Comprehensibles therof, which may be known by us; for whatsoever we do or can truly know of thee, or thy Works, is most excellent; and so is all that we cannot know. And I thank thee for the discovery of the Initial Creation, and Original Confabrication of the World, by thy Word; and the retrospective Revelation therof to thy Servant *Moses*: and for any Revelation of that Primitive *Apocalyps* to me thy most unworthy and unable Servant, by the Illumination of thy Divine Spirit. And now I beseech thee to revele it more and more to the whole World, that we may all know and acknowledg the only true *Genesis* of the World, and thee the Creator, who art both the Author, and End therof. And wherin I am Ignorant, still teach thou me, or wheriu I have Erred, discover it to others: that neither thy Divine Truth may be dishonored by my Human Infirmary, nor any honor therof ascribed to my Infirm Humanity: but that we all, may always, and in all things, Laud and Glorify the most Holy Name of thee, the Infinite *Jehovah*, and Creator, through *Jesús Christ*, the *Messiah*, our Redeemer; whom to Know is Life Eternal, *Amen*.

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FINIS.



FINIS







